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THE MANUFACTURE OF CHEESE.

MILK from healthy cows always contains the same substances, but the *proportion* of these substances varies considerably according to the age of the cow, breed, and distance from calving. The kind and quantity of food, and the general treatment of the cow also influence the composition of milk to a greater degree than is generally supposed. It is difficult, therefore, to state, even approximately, what is the average composition of milk. We have been at the trouble, however, of collecting such analyses of milk as have been made by reliable chemists, and obtain the following figures as the mean of *eighteen* separate determinations. According to these analyses, 10,000 pounds of milk contains:

Water,	8,695	pounds.
Casein or curd,	391	"
Butter,	398	"
Sugar,	476	"
Salts,	40	"

Cascin, or pure curd, is almost identical in composition with the white of egg; with the albumen of grass, roots, hay, &c.; with the legumin of peas and beans; with the gluten of wheat, &c., and with all the so called protein compounds of oil cake, bran, linseed, corn, barley, oats, and all substances used as food. These foods also contain oil or butter, as well as starch or sugar, and salts; so that we find in milk precisely the same substances as in grass, hay, roots, grain, &c.

Milk when drawn from the cow is always alkaline; it contains free soda. Casein or curd is insoluble in pure water, but readily soluble in water containing free soda. It is the soda of the milk, therefore, that keeps the curd in solution. The oil or butter is contained in little bags or films of casein, and is not dissolved but simply suspended in the water. The sugar and saline matter are of course held in solution.

Such is milk when drawn from the cow. By allowing it to cool and remain quiet for a short time, the little bags of butter, being specifically lighter than the other portion of the milk, rise to the surface and are known as cream. Other changes soon take place. The milk coagulates, and at a warm temperature soon becomes perceptibly sour. The cause of this is very simple. At a proper temperature, by the absorption of oxygen from the atmosphere, the casein undergoes a slight transformation, and reacts on the sugar of the milk, converting it into lactic (milk) acid. This acid immediately unites with the soda which holds the curd in solution, neutralizing it, and forming lactate of soda, while the casein, being insoluble in water, is precipitated; or, in common parlance, the milk becomes curdled. The conditions favorable to fermentation—heat, light and moisture—are therefore *unfavorable* for preserving milk sweet.

Milk can be instantly curdled by the addition of an acid, and in some countries, spirits of salts (hydrochloric acid) and vinegar (acetic acid) are used instead of rennet for "setting the cheese." In these cases, the soda which holds the casein in solution is neutralized by the acids, and the curd immediately becomes insoluble, and is separated from the whey as in ordinary cheese making. Cheese so made, however, is hard and unpalatable.

The only way to make good cheese is to produce lactic acid from the sugar of milk by fermentation. A great variety of means are employed for this purpose. As we have said, the casein in milk will of itself change the sugar into lactic acid and curdle the milk; but before it does this it has itself begun to ferment, under the influence of light and heat, and by the absorption of oxygen from the air. If curd be exposed to the atmosphere for a few days, and then added to milk, it coagulates it as quickly as rennet, and is often used for this purpose. A number of vegetable substances, such as the juice of the fig or thistle, a decoction of the dried flowers of the artichoke or thistle are also used as rennet. All animal substances in a certain state of decomposition will convert the sugar of milk into lactic acid, but, although pig's bladder is still used in some countries in Europe, it is generally conceded that the stomach of the calf, properly prepared, is the best substance for this purpose.

RENNET AND ITS PREPARATION.—When fresh, the membrane of the calf's stomach is insoluble in water, but when it is salted and kept for several months exposed to the air, a portion of its surface is decomposed, and becomes soluble. It is this soluble, decomposed, or more properly *decomposing* membrane, which is the active principle in rennet. It is a soluble, highly nitrogenous substance, having its elements in a disturbed state, and therefore highly effective in inducing change in the elements of other bodies with which it is brought in contact.

In preparing rennet, we have to check the natural decomposition of the stomach by the use of salt—otherwise it would communicate an unpleasant flavor to the cheese—but at the same time keep the salted stomach long enough to permit its elements to become disturbed by the action of the atmosphere. In the celebrated Cheshire cheese districts of England, the skins are cleaned out and packed away with salt in an

earthen jar till the following year. They are taken out a month before use, stretched on pine sticks, and dried. A square inch of the skin for each 15 or 20 gallons of milk is soaked for 24 hours in a solution of lukewarm water and salt, and the whole poured into the milk and well stirred. In Gloucestershire, the cleaned stomach is salted and pickled and dried; and when at least a year old, it is well sodden in salt water; half a pint of which is sufficient to coagulate 50 gallons of milk. In Ayrshire, *the contents of the stomach are preserved;* the stomach is well salted, both inside and out, and dried for a year or more; and when needed for use, the whole is chopped up and placed with salt in a jar, along with water and new whey, which after two or three days, is strained to remove impurities, and is then ready for use. In the dairy districts of this State, the stomach is emptied of its contents without scraping or rinsing, salted and dried, and kept for one year. It is then soaked for 24 hours in tepid water—a gallon of water to each rennet. They should be frequently rubbed and pressed to get out all the strength. The liquor containing the soluble rennet, is then saturated with salt, allowed to settle, and strained to separate the sediment and all impurities. It is then fit for use. It should be kept in a stone jar, and in a cool place. As much of the liquor is used each morning as will set the cheese firm in 40 minutes. We have visited many excellent English dairies where the same system is adopted. It is, in our opinion, better than placing the rennet itself in the milk. The stomach may again be salted, stretched, and exposed to the air for some months, when it can be used over again—a fresh portion of the membrane having been decomposed by the air and rendered soluble. This fact, and others that might be mentioned, sufficiently prove that it is not the *gastric juice* of the stomach that is the active ingredient in rennet in coagulating milk.

Temperature of the Milk, Scalding, &c. — As cheese making is a fermenting process, it is influenced materially by heat, proceeding within certain limits, faster or slower, as the temperature is raised or lowered. In England, the milk is generally raised to a temperature of 85° Fahrenheit before adding the rennet. In this country it is set cooler, and raised to a higher temperature after the milk is coagulated. This is called "scalding." The word is a bad one—calculated to mislead. To "scald the curd" would be to spoil the cheese; but all that is meant by the phrase is raising the temperature of the whey and curd to about 100° Fahr. This "scalding" process has many advantages; among others, the cheese requires less pressure, and the milk can be set at a much lower temperature—say 80° Fahr.

Scalding should be done with great care and nicety. Formerly it was done by heating a portion of whey, and pouring it into the cheese; but there is danger of injuring a portion of the cheese by over-heating it. A much better method is now generally adopted by the dairymen in the northern counties of New York, and it is one of the greatest modern improvements in the art of cheese making. What our English friends call the "cheese tub," is made of tin, and is placed in a wooden frame, so fixed that it can be surrounded by hot or cold water, as desired. The evening's milk is strained into this tin, as it is brought in warm from the cows; and is kept cool by allowing cold water to run round it. The morning's milk is added to the cooled evening's milk, and if not then sufficiently warm to add the rennet, warm water is poured round the tin till the proper temperature is attained. There is some difference of opinion on this point; we know good dairymen who add the rennet to the milk at 80°, and others not till it is as high as 90°. The curd should come in about 40 minutes. Shortly afterwards, the curd is cut up with a "cheese breaker," and then the temperature is gradually raised by pouring warm water round the tin. Many err by raising the temperature too fast. It should not be increased more than a degree in five minutes. In many dairies, a steamer is employed for heating the water surrounding the tin, containing the milk, or whey and curd, as also for supplying hot water for washing utensils, &c.

Separating the Curd from the Whey. — The English method of separating the whey from the curd by allowing it to settle, and dipping off the whey, is too slow for an intelligent, go-ahead American. In some of the dairies we have visited in the northern districts of this State, a lattice frame-work, on which a large cloth is spread, is fitted into a sink, connected by a pipe with the receptacle for the whey, or pig cistern. The whey and curd are dipped on to this cloth, the whey running through in a few minutes, leaving the curd on the cloth. A little cold water is then poured on to the curd to keep it from packing. Some, however, prefer to cool whey and curd together, by putting cold water round the tin. When the whey has all drained away, the curd is broken up fine and salted. It is then placed in a cheese hoop and pressed for twenty-four hours.

There are a number of excellent cheese presses, but probably none superior to that invented by Mr. Dick. The Self-Acting Press, so called because the weight of the cheese is the power which creates the pressure, is frequently used in small dairies In the dairy districts of this State, Kendall's Cheese Press would appear to be the most popular, being cheaper than Dick's, and more efficient than the Self-Acting Press. A weight of 20 lbs. at the end of the lever gives a pressure of 10 tons. In all presses it is very desirable that the pressure should faithfully follow the cheese as it shrinks.

The English Press their Cheese more than we do.—The English dairymen, as a general thing, do not scald their curd, and hence much more care is needed in salting and pressing than in the process generally adopted by intelligent cheese makers in this country. In Cheshire, after the curd is separated from the whey, it is put under a hand press for an hour or two, and as much of the whey expressed from it as possible *previous to salting.* When taken from under the hand press, it is broken quite fine by hand, and salted. It is then put in the cheese hoop, and pressed slightly for six or eight hours. It is then taken from under the press, pierced with a wooden skewer, in order to open channels for the exudation of the whey, covered with a clean cloth, and put under a heavy pressure till next morning, when a clean cloth is again put round it, and a heavy pressure applied till it will no longer wet the cloth. Cheeses are frequently left under the press three or four days. "Scalding" expels the whey from the curd more effectually than can be done by the most powerful and long continued pressure, but it is a question whether at the same time it does not destroy some of the desired flavor of the cheese. If our dairymen should "scald" less, and press more, their cheese would be more highly prized, at least in the English market.

LIME IN MANURE HEAPS.

Eds. Genesee Farmer:—After having given you so much trouble, may I again venture to ask your advice in reference to a matter which I do not find particularly stated in any of the books, or within the scope of any one's experience—any, at least, of my acquaintances.

The conditions of a very stiff soil, flat, wet, and hitherto wretchedly tilled, destitute of vegetable matter, and responding most kindly and permanently to the application of *guano* and farm-yard manure, require that I shall apply my farm yard manure to wheat along with one hundred pounds of guano per acre, a combination which has heretofore paid me better than two hundred and fifty pounds of guano alone. All my winter manures from sheep, hogs, horses and cattle, except a little compost, are now in my barn-yard, and my cattle are penned on it nightly. After July, my sheep will be also. This, as you are aware, by hard tramping, keeps it from heating, and keeps it well ammoniated, and is *practically*—see Boussingault—about the best mode of treating it. Now what I want to know is, what will be the effect of carbonate of lime, or of hydrate of lime, on this mass of manure? Remembering what Johnston has said about the formation of nitrates, and nitrate of lime, and what another has said about the mordant properties of lime in soil, it occurred to me that it might be of service, on land requiring lime, to furnish it in this kind of compost, rather than in the more expensive mixtures which Puvis speaks of as prevalent in La Sarthe.

It may also have some effect in breaking down the fibre, and producing that decomposition so softening of the coarser material which we ascribe to the action of plaster on straw which has been plowed under the ground.

If you have any practical knowledge, or any theoretical suggestions, or any good authority, to offer me on this head, I would be much obliged to you. R.—*Virginia.*

P. S.—I include hydrate of lime, because burnt oyster shells, water-slaked as soon as drawn from the kilns, make a very common article of our lime trade.

Remarks.—The action of hydrate of lime (caustic or quick lime), carbonate of lime (chalk), and sulphate of lime (plaster), on vegetable substances, is very imperfectly understood. The recent experiments of a reliable chemist seem to prove that, under certain circumstances, lime has a preservative effect on vegetable substances, or *retards* their decomposition. In this case, as in nearly all others, practical farmers have observed the fact before the man of science. Morton, in his excellent work *On Soils*, says: "If straw of long dung be mixed with slaked lime, *it will be preserved.*" The lamented Philip Pusey, in the *Journal of the Royal Agricultural Society*, says: "Sir H. Davy's theory, that lime dissolves vegetable matter, is given up; in fact, *it hardens vegetable matter*" This is undoubtedly true, as we have said before, under certain circumstances. On the other hand, it is equally certain that when lime is added to a heap of organic matter, *in warm weather, and in the presence of water and air*, it accelerates fermentation.

The dung heap referred to by our esteemed correspondent, contains, undoubtedly, a considerable quantity of urate and other fixed salts of ammonia. The immediate effect of mixing lime with the heap, would be to set free all the ammonia of these fixed salts—lime having a stronger affinity for the acids than ammonia. This action would probably result in much loss of ammonia; for while it is, perhaps, *possible*—by compressing the heap, adding a fresh layer of dung and litter every day, and keeping it constantly moist—to retain nearly all the ammonia, even after it has been liberated from its acid combinations; yet it is running considerable risk, without obtaining any compensating advantages.

Our correspondent justly observes that "hard trampling keeps the heap from heating, and is practically about the best mode of treating it." The effect of trampling is to retard fermentation by the exclusion of air. This slow fermentation is desirable. Active fermentation produces great heat, and this lessens the power of water in the heap to retain ammonia, while, at the same time, a much greater quantity of ammonia is set free in the heap. Loss of ammonia can hardly fail to be the result. Now, mixing lime with the manure heap induces this rapid fermentation; or, in other words, its effect is precisely the reverse of the "hard trampling" which practice and theory alike pronounce desirable.

The addition of lime to a manure heap *may* induce nitrification. But there is no advantage in this, if the nitric acid is produced from the nitrogen or ammonia of the manure, which is undoubtedly the case. A pound of nitrogen in the form of nitric acid is worth no more, if as much, as a pound of nitrogen, in the form of ammonia, or some readily-fermenting organic substance. It seems to be the opinion of some writers that the presence of lime, potash and soda in composts, changes the *nitrogen of the atmosphere* into nitric acid. *This is a mistake.* The only effect of lime or ashes in a manure heap, so far as we can see, is to increase fermentation. This, though sometimes desirable, is generally attended with great loss of ammonia. In addition to this, such a soil as that described by our correspondent would probably be benefited *mechanically* by long, unfermented manure. So that, in this case, there could be no possible advantage in adding lime to the manure heap.

The action of *carbonate of lime* is the same as that of quick lime, except that it is very much slower. In fact, carbonate of lime, as found in marl, chalk, limestone, &c., is not sufficiently active to do either good or harm, in an ordinary manure heap.

Lime on Grass Land.—An application of lime has frequently a very beneficial effect on grass land. It kills heath, moss, and sour and benty *(agrostis)* grasses, and brings up a sweet and tender herbage, mixed with white and red clovers, more greedily eaten and more nourishing to the cattle. Indeed, all fodder, whether natural or artificial, is said to be sounder and more nourishing when grown upon land to which lime has been abundantly applied. On benty grass the richest animal manure often produces little improvement until a dressing of lime has been laid on.

Sir Humphrey Davy states that the germination of seeds in general is hastened by watering them with a solution of chlorine. Have any of our readers ever soaked seed in a solution of chloride of lime to accelerate germination?

A DAY IN SENECA COUNTY.

On the 26th of June, we had the pleasure of visiting JOHN JOHNSTON, Esq., near Geneva, N. Y. His farm contains 306 acres, and every rod of it is thoroughly underdrained, from two and a half to three feet deep, with tiles. *There is between fifty one and fifty-two miles of underdrains on this farm.* There is now sixty-two acres of wheat on the ground—and such wheat! After looking at such crops as have mostly come under our observation this summer—from five to fifteen bushels per acre—it is a pleasure to gaze upon a dark green mass of luxuriant wheat, undulating in the breeze, with strong, bright straw, and well filled ears, that, if it escapes the wheat midge, will certainly yield between forty and fifty bushels of wheat per acre. We wish every farmer in the country could see this wheat. It would convince all that there is profit as well as pleasure in underdraining.

Let no one suppose that Mr. JOHNSTON is an amateur farmer. He commenced with little money, and purchased 112 acres of his present farm when the country was new. Some of his neighbors predicted that he would soon have to sell it again; that the land was too hard, too wet, too cold, too poor, for him or any other man to get a living off it. However, he went to work with a resolution and energy that nothing could daunt. When at plow, if any one wished to talk to him, they must walk by the side of the plow, for stop he would not. The dryest portions of the farm he thoroughly summer-fallowed, and obtained fair crops. He raised his own clover seed, and sowed it without stint. He never plowed under any clover, but made it into hay, or grazed it with sheep and cattle. He never sold a bushel of oats or corn in his life, but fed them out on the farm. For sixteen years he cut no timothy or other cereal grass. He imported a few tiles from Scotland at great expense. Then he got patterns, and induced a man to make the tiles in this country. These cost him $28 per thousand. A tile machine was finally imported, and now these same tiles are purchased for $8 per thousand. He then commenced a more systematic course of draining, and finished only last week, having laid with his own hands the greater portion of the fifty-one miles of tiles. This is not amateur agriculture. It is plain, practical, paying farming. The farm, as it now stands, is a speaking monument of the power of intelligent, persevering, skilful industry, when applied to the cultivation of the soil.

Underdraining has been the primary means of raising this farm to its high fertility; but other means have not been neglected. As we have said before, no corn, hay, straw, &c., have been sold off the farm. Sheep enough to consume all the straw are kept; and it is found that straw and a little oil-cake will make them very fat. Last winter 435 were fattened in this way. Nothing is more profitable. Besides the corn—2,900 bushels of ears of which have been grown and fed out in a year—as much as twenty-five tons of oil-cake have frequently been fed out in a season. As many as ninety head of cattle have been fatted in the yards in a winter. It is not to be wondered at that the manure made from this oil cake, corn, oats, straw and clover (Mr. J. is cutting fifty-eight acres of clover hay this year—and such clover!—and we presume usually cuts as much), should raise the land to the highest state of fertility.

From six to eight tons of plaster are used on the farm each year. If the wheat is not too rank, it is sown on the wheat in the fall or in the spring, with the clover seed; otherwise, it is sown on the clover after the wheat is harvested, or early the next spring. The effect of plaster on the clover is most marked. Mr. J. has been in the habit of leaving strips without plaster, and invariably observed that the cattle and sheep would not eat the clover on these strips while there was any on the plastered land. He has "great faith in a jury of dumb beasts," and is confident that manure, plaster, &c., not only increases the quantity, but also the nutritious quality of the clover, &c. Plaster has a good effect on the corn crop, a bushel per acre being sown at or soon after planting. A bushel or two of salt scattered along the rows of corn (Mr. J. usually plants in rows, not hills) is also beneficial. Salt is also sown on the wheat—a barrel to the acre—with good effect, imparting strength and brightness to the straw. From our own experience, we should say that the action of salt is generally to retard vegetation, and is usually beneficial only on rich land. On the rich land of the west, salt might doubtless be used to great advantage.

In 1854, Mr. J. used a ton of Peruvian guano on his wheat, and last fall he sowed three tons. The effect has been visibly beneficial all summer, though Mr. J. questions whether it will pay with wheat at one dollar per bushel. He also used a ton of guano and some poudrette and Ta-ew on corn this spring.

This is a very meagre account of Mr. JOHNSTON's farm practices; but the time and space at our command this month, forbid further detail.

Adjoining the farm of Mr. JOHNSTON, ROBT. S. SWAN, Esq., has one of the finest and most beautifully located farms of about 340 acres we ever saw. The farm house is situated on the highest point of the farm, and commands a fine view of Seneca lake, Geneva, &c. The house and buildings, it is said, cost $26,000. Mr. S. studied agriculture with Mr. JOHNSTON. He purchased this farm five years ago, and brought intelligence, skill, and great energy, practical knowledge, and abundant capital to his aid in improving it. The year he took possession, the wheat on the land produced only five bushels per acre. Now there are fifty acres of wheat on the farm that will average forty bushels per acre, if the wheat midge does not destroy or materially injure it. This result has been attained principally by under-draining and by thorough tillage. Every rod of ground on the farm is well under-drained. There is upwards of fifty miles of under-draining on the farm.

We should state that Mr. SWAN has used seven tons of guano on the farm since last fall. His barley and oat crops are excellent. The corn has had to be planted three times, the mice eating the seed about as fast as it can be planted. That which is up looks well. Some eight acres of the field that have been planted three times, Mr. S. intends to sow to buckwheat.

About three miles from Mr. JOHNSTON, along the lake shore, Mr. FOSTER has a beautiful farm. In 1849, Mr. F. took the first premium for the best farm in the State. The prominent points in Mr. FOSTER'S management are these: Corn is planted on clover sod, plowed up generally in the spring. All the manure is applied to the corn crop. After corn, the land is sown with barley, followed with wheat in the fall, which is seeded down with clover the next spring.

The land lies in grass two or three years, and is then broken up and planted to corn, as before. Mr. F. thinks that for his land this is the best rotation he can adopt. He thinks he gets as good wheat after barley as after a summer fallow. The wheat now on the ground—some fifty acres—looks well. The corn is splendid; not a weed to be seen in the field. Mr. F. seldom or never uses the hand hoe in cultivating his corn. By passing the horse cultivator both ways between the rows, he manages to keep the land free from weeds, and in as fine tilth as though it were summer-fallowed.

The wheat crop in Seneca county this year will not be an average. It is very thin on the ground; it looks well to a superficial observer, but "you can see too far into it." There was much less land sown with wheat last year than formerly; and it seems to be the prevailing opinion among farmers that the aggregate wheat crop will be much below an average in Western New York. Barley and oats never looked better; and where the corn has not been destroyed by mice, or has failed to germinate from being imperfectly matured last fall, it looks well. We are glad to see that the cultivation of peas is on the increase. We saw several fields between Rochester and Geneva, all of them giving promise of an abundant yield. The opinion we have advocated, that on wheat farms it will pay to grow peas to feed out to hogs early in the fall, before the bug does much injury, is gaining ground. The clover crop is immense everywhere. Timothy is very thin on the ground, and receives much injury from a worm in the upper joint. In fields where there is no clover with the timothy, the hay crop will be light; but in many fields we have seen, a spontaneous growth of white clover has taken the place of the timothy, and will help out the hay crop.

Plaster on Clover Seed.—In our "Hints for the Season," in the June number, in recommending farmers to raise their own clover seed, we said: "Plaster increases the foliage of the plants, but, it is said, retards the ripening of the seed." Mr. John Johnston mentioned a case in his own practice which is to the point: He had a fine crop of clover, which he mowed early, and left the second crop to go to seed; and wishing to have an extra yield of seed, he sowed on it a bushel or so of plaster per acre. *The clover grew prodigiously, but produced no seed.*

Mice and the Failure of Seed Corn.—*Ed. Farmer:*—There is a good deal of failure from seed corn this season. It is generally attributed to want of vitality in the seed of last year's growth. I believe the superabundance of mice has something to do with this failure, especially on sward ground, and on lands that were turned last season with a heavy sward. I have examined mine to some extent, and find no corn in the hills—at least none in comparison—that was rotten. Now to remedy the evil, as it is too late to replant with corn, I intend to plant the spaces with white beans, as they pay as well as anything at the present reduced prices of farm products; and I would advise my brother farmers to do likewise; or, if the land is suitable, put turnips at the second or last hoeing, as they are an excellent feed for sheep and young cattle.

Could you, Mr. Editor, persuade others to give their opinions whether the mice or rot is most in fault with our corn fields this year? D.—*Gates.*

Clover Hay for Horses.—In conversation with an English gentleman who had been raised a farmer, he stated what agrees with my own experience in regard to the merits of clover hay; and that is, that clover properly *cut* and *cured*, is our most valuable hay for the horse. I have noticed that when horses are fed with mixed hay (i. e., clover and timothy), they will pick out the clover first, and if not sufficient to satisfy their wants, they will then partake of the latter; and when horses are fed on good clover hay, their coats are glossy and fine, and they are in better spirits than when fed on any other; I mean hay alone. The gentleman of whom I have spoken, says the teamsters of England prefer clover hay, at all times, to any other; and if, perchance, their clover runs short, they call for "more corn (oats), as the clover is all gone." Will not this suggest the idea for farmers in America to be a little more careful in saving their clover, so as to have a bright, sweet feed, instead of the black, leafless stalk commonly styled clover hay. D.—*Gates.*

Glass Milk Pans.—L. V. Bierce, of Akron, Ohio, has been experimenting a little with milk in glass pans, and furnishes the result to the *Ohio Farmer:*

"I took the milk of the same cow, milked at the same time, and divided it equally, putting half in a *glass* pan, and half in a tin pan, and placed them side and side. In the first twenty-four hours, were two thunder showers; and at the end of that time, the milk in the tin pan was sour; that in the glass pan sweet and good. At the end of twelve hours more, that in the tin was thick *clabber*, or *lobbered*, as the Yankees call it, and that in the glass *began* to turn.

"From this, I believe glass pans will preserve milk one-third longer than tin pans. Will our dairymen try it?"

Yellow Dock.—I perceive a great many yellow dock in most of the meadows around the country. Now they may be good for *nostrums*, but they are not good for hay; and where a stalk of it grows, a stalk of good timothy or clover might grow just as well; and as mowing, or even plowing, will never eradicate it, I would advise every farmer to take a day now (it would have been better earlier in the season), and pull them up, and carry them into the road, where the wagons may have a chance to grind them to powder; or, as the boys will want some change next winter, let them pull them, and *dry the roots.* They can probably get something for them at the drug stores. D.—*Gates.*

Lime Hastens the Maturity of the Crop.—Johnston says: "It is true of nearly all our cultivated crops, but especially of those of corn, (wheat,) that their full growth is attained more speedily when the land is limed, and that they are ready for the harvest from ten to fourteen days earlier. This is the case, even with buckwheat, which becomes sooner ripe, though it yields no larger a return, when lime is applied to the land on which it is grown." Have our readers any experience on this point?

Hemp—Will it Kill Vermin?—The *Farmers' Encyclopædia* says:—"Another valuable property of hemp is, that it effectually expels vermin from plantations of cabbage. If it be sown on borders of fields, &c, planted with that vegetable, no caterpillar will infest it." Is this a fact?

SPURRY AS A GREEN MANURE

Has spurry *(spergula arvensis)* been tried for the purpose of plowing under as a green manure in this country? If it has not, it is well worthy the attention of the Agricultural Department of the Patent Office. The probability is that it would be found a decided acquisition on the poor sands of the Atlantic slope. It is on such light, dry soils that green manuring has been found most beneficial, and "for such soils," says Johnston, "no plant has been more lauded than *spurry*. It may either be sown in autumn on the wheat stubble or after early potatoes, and plowed in in spring preparatory to the annual crop, or it may be used to replace the naked fallow, which is often hurtful to lands of so light a character. In the latter case, the first sowing may take place in March, the second in May, and the third in July—each crop being plowed in to the depth of three or four inches, and the new seed then sown and harrowed. When the third crop is plowed in, the land is ready for a crop of winter corn."

Von Voght states that by such treatment the worst shifting sands may be made to yield remunerative crops of rye—that the most worthless sands are more improved by it than those of a better quality—that the green manuring every other year not only nourishes sufficiently the alternate crops of rye, but gradually enriches the soil—and that it increases the effect of any other manure that may subsequently be put on. He adds, also, that spurry produces often as much improvement if eaten off by cattle as if plowed in, and that when fed upon this plant, either green or in the state of hay, cows not only give more milk, but of a richer quality.

Thaer in his *Principles of Agriculture*, a work which should be in every farmer's library, says:

The following are the properties which ought to be united by those plants which are cultivated for the purpose of being buried as vegetable manure:

The plant chosen ought to be one adapted to the texture, qualities, humidity, and situation of the land on which it is to be sown, in order that, so far from vegetating slowly, it may shoot up and flourish with all possible rapidity.

The seed must neither be expensive nor scarce, or it must be of such a nature that a small quantity of seed will sow a considerable extent of land.

This plant must attain its full vigor and development in the shortest possible space of time, in order that the requisite number of plowings may be bestowed on the fallow, if the crop be sown on fallow land, or that it may succeed the harvest of some other crop, and attain its development that same year.

It must be well adapted for the purpose of keeping the soil loose—must penetrate deeply into it by means of its roots, and cover it with its leaves.

It must contain a considerable portion of mucilage, or of some other vegeto-animal substance, which is analogous to animal matter.

It must be disposed to putrescence.

There is no plant that unites all these qualities in so eminent a degree as the *spergula arvensis* (corn spurry;) various trials with regard to its fitness for this purpose have been made, almost all of which have turned out well. Previously to plowing this plant into the soil, cattle may be allowed to pasture slightly upon it; but then they must be suffered to remain there during the night, if we would not take away a considerable portion of the advantages which might otherwise be derived from this practice.

PRICE OF LAND IN THIS COUNTRY AND IN CANADA.

The *Country Gentleman* says:

'Just the Difference.—Along the Niagara river, good farming lands on the American side command $100 per acre. Entirely similar, perhaps in some respects superior, locations on the Canada shore are procurable at any time for $40. So we were informed on the best authority during a visit there. Institutions go a great ways."

Population and prices go a "great ways" further. On the American side we have the Erie Canal and the Buffalo & Niagara Falls and Buffalo & Lockport Railroads, a dense mercantile and manufacturing population—Lewiston, Niagara Falls, Tonawanda, Black Rock and Buffalo stud this side of the river, while the Canadian side is purely a farming district. Before the passage of the Reciprocity Bill, wheat was 20 per cent. higher in Lewiston than in Queenstown—two places connected by a bridge. Under such circumstances, it is not a matter of surprise that land should be higher on this side the river than on the other. It is manifestly unfair to compare the price of land remote from any commercial city with that in close proximity to the best of markets, and then to attribute the difference to the "institutions" of the two countries. Speculation has much to do with the price of land. There are few farms in this country that will pay the interest on "one hundred dollars per acre" and afford the farmer a reasonable compensation for his labor, when devoted exclusively to ordinary agriculture. A small farm, with good buildings, may be worth it, or a large farm properly underdrained, but a man that has to get his living by the cultivation of wheat, corn, &c., will have to look some time before he meets with a farm that he will be justified in paying one hundred dollars an acre for. If the price of land *alone* is to be taken as an index to the civil and religious freedom of a country, then English "institutions" are a "great ways" better than those of the "Model Republic," for certainly the land is worth more an acre in most parts of England than with us. Such reasoning, however, is fallacious.

If the editor of the *Country Gentleman* had done as we did some time ago—taken a span of horses and driven from Niagara Falls to London, he would have passed through as good an agricultural district as any on the continent—as good as Western New York. He would have found good houses, substantial and commodious barns, good fences and roads, good breeds of cattle, sheep and swine, powerful and active farm horses, superior implements, and the land as well plowed and the crops as good and as well cultivated as on this side the Niagara river.

Of the "institutions" of Canada, we know nothing—of her agriculture and her farmers, we can speak in the highest terms, and we are sorry the editor of the *Country Gentleman* did not go into the country and judge for himself rather than take the disparaging assertions of even the "best authority."

Advice to Farmers.—If you have occasion to chastise an animal having a dung fork in your hand, do not strike with the back of it, but rather use the points; for the wounded animal may recover, but the broken fork can never be repaired, and will be to you for years a vexatious memorial of your folly. M. G.,

Canton, Pa., May 21, 1856.

TRIP TO WISCONSIN.—BY S. W.

In passing this time west, I saw renewed evidences of improved farming. Even the *presqu isles*, or little intervals along the Irondequoit, made by the meanderings of the creek, were now tilled for the first time since the beginning. Other heretofore wet fields now denoted the magic effect of draining. Even PAT's shanty, by the road side, instead of the Irish puddle, as a sign of nationality, at the door, had the better substitute of a potato patch, now extended along the railroad fence to a very respectable length. Thanks to the railroad ditches, the potatoes were up and hoed, and at least two weeks ahead of field crops planted at the same time. But when we come to a deeper cutting, where the subsoil has been unequally distributed, rich as it is in organic remains, PAT lacks the German industry to attack it.

It is said that since the completion of the Suspension Bridge, at Niagara Falls, the great hotels of Buffalo have had diminished profits. But the shipping trade, manufactures, and all other business, is making rapid strides here. Its manufacturing industry, now large, is increasing with that noiseless progression which cheap living, and, above all, cheap rents, can make permanently prosperous. Nothing is wanting to make Buffalo the largest manufacturing, as she is the greatest inland commercial city of the Union, but the completion of the railroad, of less than eighty miles, to the coal regions of Pennsylvania. Vegetation around Buffalo is about ten days behind Waterloo; and the late frosts here, had they occurred with us, would have cut off beans and tomato plants. Here the beans were cunning enough to peep above ground only after the last frosty night had passed away; and the green cucumbers, as well as tomatoes, are yet under glass.

Being detained by my friends "time enough yet," I missed the great Southern steamer. At the Lake Shore depot, the night train was preparing to start just as we returned there—$13 dollars to Chicago, first class fare; $8, second class (not the emigrant). Looking into the second class, I saw good, confortable seats, sliding windows, and only a small company of plain-looking Yankee male and female passengers. As a Spaniard is never afraid of his *Pisano mio*, even in the shape of a bull, neither am I; hence I paid my $8 and started. I got to Cleveland at early breakfast time; but when we come to take the cars on the west side of the river, we were politely told that no second-class car would be sent out until four in the afternoon, and that we must either wait or take a first-class ticket and pay the difference. As we should get to Chicago at 11 P. M., instead of 9 the next morning if we waited, and having a dread, not of the famed Chicago hostelries, but only of their reputed expensiveness, we one and all decided to stay and see the Cleveland lions, while we waited for the four-o'clock train.

Cleveland, barring only along the docks and warehouses the noisome, compound smells (in which the mineral alkalies, and vegetables far gone in decomposition, were present), is a beautiful, cleanly, busy, thriving city. Its magnificent, capacious depots and warehouses, are on a more extended scale than I had ever before seen—all built on piles driven into the submerged sands of the lake and river. Here were canal boats unloading iron and nails and manufactured articles, from Pittsburg and Cincinnati; while others were discharging pork, flour, corn, and all the other normal products of Ohio's rural industry. Here, also, were lake steamers, propellers, and sail craft, and the unpretending, but mighty powerful, little tug, which, in default of orders, runs out into the offing to look for a customer. Strange as it may seem, I saw a hermaphrodite brig towed in with a leading breeze and a fair wind. Perhaps the canny skipper is to have the preference whenever in company of others he is wind-bound or becalmed outside of port.

Left Cleveland in the four-o'clock train, second class, with a long train, but no emigrants. They had been sent in the morning, on the other road, by the way of Norwalk. Some of our passengers attempted to take that train; but they could not stand the stale smell of the ship steerage, which these unwashed animals had brought with them from sea. Passed along the lake shore; generally low, wet land, small, deciduous trees, and but little good farming in sight of the railroad. Soon came to the low, wooded islands of Sandusky Bay; then to the outskirts of that circumambient city. Soon became too dark to distinguish anything but the tall, dark forest of trees that delight in a semi-subaquaous region. Arrived at Toledo at 10 o'clock. A long, covered range of depot, on a piled marsh, was all we could now see. Here, again, the *stool-pigeon* car was taken off, and we were told with much modest assurance by the self-possessed ticket-seller, that he had no *excuses to make for the Company*; he only worked for his wages. I gave him credit for so masterly a cut-off to all useless controversy. We must now go a mile or more to the hotel, and wait till morning, or pay the difference, as the brokers say, and go on in the first-class cars. Of the two evils, Yankee-like, we now chose the least, each paying the exaction, $2, under protest. FAUQUIER TINVILLE was accused by COLLOT of attempting to demoralize death itself; but there can be said, in his defence, that he never either attempted to reduce hypocrisy to a system, or to annul the blessed uses of honor and honesty between man and man; while the directors of these two railroad companies do both. Methinks such pitiful swindling will cease as soon as the railroad direction is purged from the councils of those vulgar men who owe their present position to the misfortune of having riches suddenly thrust upon them. One man said it was a Yankee trick, when a stalwart down-easter caught him by the throat, and told him not to repeat his words; and he didn't.

Got a good breakfast, barring the coffee, at White Pigeon, next morning. Could not find the car I had left until I had passed through it twice, as I looked at men rather than the car and its equipments, and my ship-mates had become metamorphosed completely, particularly the females, by a change of dress. They now sported French lace collars, shell combs, &c. Give me a down-easter as the true master of the economy of life. No Yankee woman puts quite all on her back at once to show off in a railroad car, however strong the temptation may be. The progress of such a people may be depended on in a new country, even during a money panic.

We now pass over Pigeon and Sturgeon prairies—the best farms in Southern Michigan. All here is prairie, or oak opening—none of the large, tall sylva of Western New York. Passed the Hoosier villages, of a Yankee exterior, Elkhorn and Laporte; then to the Sandy region of the lake, covered with sma'l

pines of the Strolus family. From the Calumet station, on the east, to Chicago, on the west side of Lake Michigan, all, or nearly all, is marsh or swamp, or open, shallow bulrushed waters; but Chicago pushes a straggling suburb far south of the city proper, with streets and corner-lots staked out as far as high terra firma well permits. Being too late for the Milwaukee morning train, I improved the few hours before the next train, to try to solve the problem of Chicago's present greatness. The mere passage of travelers here, has been beyond anything, perhaps, ever before witnessed in any age or nation. This tells the story why many hotel keepers have retired rich. 'Tis said at this time that no publican feels himself poor enough to adopt the low rates of a New York hotel. In fact, it has passed into a truism here, that the whole body politic east is sadly behind this great age of steam and electricity. It is to the opening of an extended country of unsurpassed fertility, all fitted by nature for the plow, that Chicago at this time owes her unparalleled growth and prosperity; for what would the lake navigation be, or the Illinois canal, or the railroads, had Illinois and the West been covered, as Western New York once was, by a thick-set, immense forest. Here are few of those great work-shops, vomiting forth smoke like so many volcanoes, as at Cincinnati. But here are great and busy wholesale stores and retail shops, where every far-fetched article is sold, monster warehouses and grain elevators, and a mercantile marine, not square-rigged or sea-appointed, it is true, but nevertheless all-sufficient for a monstrous carrying trade on the lakes. Here you will see a sturdy little tug pass a draw-bridge many times a day, lugging by her side some large bark, brig or schooner, as the mercurial little pismire lugs the dead cockroach of twenty times his bulk. And then the shops! The moment you leave the great wholesale and retail streets, where everything, either useful or ornamental, may be found, you come into the region of lager bier, where every shop sells drink, and the front of every building is a shop, to say nothing of the thousand little improvised tenements built on leased lots too dear to buy, as long as money is worth two or three per cent. a month. It is now said here, that when money comes from abroad, as it was wont, tall, brick blocks are to take the place of these *bier shops*, as Chicago is destined to be to the United States what Paris is to France, only as much more than Paris, as the Mississippi is more than the Seine.

Business at this time was said to be unusually dull at Chicago. Corn, the great staple of commerce here was selling at 28½ cents afloat; a price involving a serious loss either to the farmer, or, as the trade say, to first or second hands. Low prices of agricultural products, now induced by the peace of Europe, must from the present extended production, continue for some time, and have its effect on trade generally, ultimately lowering the prices of both real estate and rents. Thus far it would seem that Chicago's greatness has been thrust upon her; but now the day has arrived for her to do something for herself, or she will inevitably lose caste with those cities of slower growth that have grown up strong as well as rich, by the continued increase of their manufacturing industry. So ar from this, we see Chicago at this time importing from Milwaukee both *lager bier* and bricks; to say nothing of the vast amount of articles manufactured in the east. S. W.—*Milwaukee, Wis.*

GYPSUM OR PLASTER AS A MANURE.

The *Boston Cultivator* has an excellent article on this subject, from which we make a few extracts:

"We are unable to tell, in advance, whether gypsum will operate favorably on a soil or not. The best way to find out is to *try it*. It may be necessary to try it more than one season before an answer can be given. Mr. Brooks, of Princeton, informs us that he sowed a hundred pounds to the acre on a pasture, which had to some extent turned wild—small bushes and coarse grass had started. The first season, little or no effect was perceived. The dressing was repeated the next season, and upon examination clover was found to be coming in. The third season, clover and cultivated grasses grew to such a degree that the cattle grazed the ground closely, and the wild plants were overcome.

The idea has been held that gypsum would do no good near the sea. It is not well founded. There are localities in close proximity to the sea, on which the best results are obtained from gypsum. Mr. Fay, of Lynn, sowed gypsum last year on a portion of his sheep-pasture, of which we have before spoken. The spot was one of the worst in the tract—so poor or so much occupied by wild trash that the sheep had avoided it. After the gypsum was applied, the sheep were noticed to graze there, and on examining the sward at the time of our late visit, the white clover was perceived in considerable quantity, and was evidently on the increase. Mr. F. said he should repeat the dressing this season.

It is a great desideratum to have a soil on which plaster will operate well. In many instances it is the cheapest manure that can be applied. True, in most cases—not invariably—the continued use of plaster without other manures, results in impoverishment of the soil. But it it will operate well at first, it affords the means of making other manures. If it produces grass, that will keep animals, and animals will make manure, which in turn will produce *more* grass, &c.

But there is some land which may be said never to be exhausted or injured by plaster. In the valley of the Connecticut river there are places where it has been the only manure used for fifty or sixty years. A meadow was pointed out to us, several years ago, on the farm of Mr. Chauncy Chapin, of Springfield, which had been mowed annually for fifty years, yielding an average of three tons to the acre, at two cuttings in a season, the only dressing having been two bushels of plaster to the acre each year—one bushel being sown in the spring, the other in August. We have also seen striking effects of plaster on similar land in other parts of the valley, particularly on the farms of Messrs. Wells and Paoli Lathrop, in South Hadley.

The soil on which plaster has produced these effects may be briefly described as follows: The high sandy plain between the river and the hills is underlaid with clay. In some situations this plain has been cut down by the action of water until the clay forms the surface, or is only slightly covered with sand or loam. The clay varies in tenacity, being in some places suitable for bricks, and where a fresh bank is exposed, the strata are almost as distinct as the leaves of a book. It is the soil formed of this clay, or a considerable mixture of it, which is so much benefited by plaster. Messrs. Lathrop's pastures are never plowed, and never manured with anything but plaster, except the manure made by the stock while feeding. Yet the herbage improves in quantity and quality.

The time of applying plaster appears to have some connection with its effects. It is the practice in some sections to apply it to clover after a growth of a few inches has been made, and to potatoes, beans, &c., at the time of the first hoeing. It is supposed that the

results are more favorable under such circumstances. According to an experiment made in Germany, cited by Prof Johnston, a given extent of land, undressed, produced of grass, 100 lbs; top-dressed 30th of March, 132 lbs; top-dressed 13th and 27th of April, 141 and 156 lbs., respectively. This would seem to support the idea that plaster operates best when sown after the leaves have been developed. Prof. Johnston asks if the results of the experiment referred to, can have any connection with the fact which has been observed, that gypsum [gypsum is composed of sulphuric acid and lime] laid on the leaves of plants is gradually converted into carbonate, its sulphuric acid being absorbed?

THE VALLEY OF THE SACRAMENTO.

The editor of the *California Farmer*, in a description of "A Trip up the Beautiful Sacramento," makes the following remarks:

"Those who never go above our city in the steamer, can have no conception of the beauty of the Sacramento, its quiet yet gently winding stream, with its green banks overhanging with stately trees; the denizens of our cities can form no idea of the extent or beauty and fertility of the Sacramento, without a personal visit. Miles and miles, aye, hundreds of miles of land, on both sides of this river is found soil as rich and fertile as man would desire, with locations for houses as beautiful as the heart of man could wish. Could the farmers of the old States but catch a glimpse of this locality —could they but hold the plow one day here, and see the rich soil upturned by the shining plowshare, they would soon give up the toil among the "stony places," where every day was indeed a day of toil, and come to our golden shores to cultivate, where we have indeed the deep and rich soil that brings forth some sixty, and some an hundred fold.

"The entire river from Vernon to Colusa, is one scene of fertility and loveliness; the large trees, with their deep green foliage bending down to kiss the rapid stream, the bright moon stealing through the waving branches and making them sparkle like a string of gems with the moving tide, as we passed onward and upward.

"No intelligent mind can pass up and down this beautiful stream, and not feel that ere long these banks and their vast prairies will all be brought into cultivation; and that such was the 'will of Providence,' brought about by the strange discovery of gold.

"There is not a single quarter section of this vast tract of land that is not capable of making a man rich in a moderate time, if he will give but a proper and constant yet scientific attention to it. For one hundred and twenty-five miles, till we reached Colusa, was one constant scene of rich fertility, enough to gladden the heart of every lover of Nature's rich landscape."

Coarse Hay for Sheep.—A correspondent of the *Germantown Telegraph* says that the very best article of winter feed that can be provided for sheep, if cut before it becomes over ripe, and properly made, is the coarse grass abounding in our natural meadows. He has generally cut from five to eight tons of this grass; wintered his sheep on it without the assistance of any other hay, and carried them through more successfully, and with less loss than could have been done by providing them with any other keep. There is something peculiar about this hay that renders it extremely palatable to the sheep, and which prevents their becoming soon clogged; their appetite for it continuing unimpaired through the season, unless vitiated by the occasional use of other and more luxurious food.

Moles versus Wire Worms.—George Wilkins states in the *London Gardeners' Chronicle*, that some years since, he had two fields, one of which was full of wire worms, and the other was infested with them to the extent of more than one-third part of it. The crops failed for the first two or three years the land was in his possession. He then bought all the live moles he could obtain, first at seventy-five cents a dozen, and then at fifty cents, and turned them down in his fields; and the crops began to improve every year, and at length rapidly. One year, in which he had sixty-four bushels of barley on an acre, and nearly fifty-six bushels of wheat, the moles were at work all the summer, and in such numbers that, as he walked among the growing crop, the ground under his feet was like a honey comb; but that was the last year he had a mole on his land; their work being done, their food—the former pests to the crops—being all consumed, the little innocent workmen, who had performed a service beyond the powers of all the men in the parish, migrated to the neighbors to perform for them the same kind of benefit they had for him; but, of course, death met them at every move; and soon the colony was destroyed.

Oil as Manure.—Some of our agricultural writers still continue to recommend refuse oil as a manure. We have had some experience in this matter, and are satisfied that pure oil has little manurial effect on the cereals. The experiments which are cited to prove the value of oil as a manure, were made with refuse matter that contained considerable quantities of fleshy or nitrogenous substances; and the good effect produced—and which these writers ascribe to the oil—is unquestionably due to these matters, which, by decomposition, furnish ammonia. Boussingault says: "I, myself, ascertained, from experiments made some years ago, with a view to test the conclusions of an agriculturist who ascribed the good effect of cake (rape-cake) to the fatty matters which it contained, that rape-oil *had no kind of favorable influence upon the growth of wheat.*" This result is confirmed by the Rothamstead experiments: 500 lbs. of rape-cake, containing the same quantity of nitrogen as 100 lbs. of salts of ammonia, had no greater effect on the wheat crop than 100 lbs. of salts of ammonia. The large quantity of oil, and other carbonaceous matter supplied in the rape-cake, did no good, for the salts of ammonia which contained none at all had as great an effect.

An Illinois Farmer.—The editor of the *Prairie Farmer* has recently visited the farm of the Hon. James N. Brown, late President of the Illinois State Agricultural Society. We make the following extract from his description of it:

"His 'home farm' consists of 2250 acres of highly cultivated land; 600 acres of which is planted in corn, and which looks as well as any we have seen this season; the balance of his land is principally in grass, and is dotted over with horses, cattle, sheep, hogs, &c. We saw about seventy-five head of 'Stock Cattle,' *forty of which are thorough bred Short Horn Durhams*—and some of them will compare with any animals we saw at the National Fair at Boston last fall."

They must be A No. 1, then, for there were Short Horns at the National Fair at Boston last fall, which cannot be beat in the world.

AGRICULTURE IN SOUTH AMERICA.

The Journal of the United States Naval Astronomical Expedition to the Southern Hemisphere, contains some account of agricultural practices in South America, which we have read with much interest. The soil and climate is remarkably favorable to the production of nearly all kinds of grain and fruits; and nothing is wanted but *American* implements, skill and enterprise, to make it the garden and the granary of the world.

On the magnificent plains around Santiago, rotation and manures are alike unknown. Nothing saves the soil from exhaustion but the rich mineral deposit left during irrigation. As the surface has a natural and rapid slope from east to west, streams generated by the melted snows of the mountains fall with impetus towards the ocean, urging along masses of limestone and other rocks. By attrition these are converted into a fine powder, which is mingled with the water. Longitudinal canals along the base of the Andes, are supplied from rivers. These, in their turn, are tapped to furnish the different *haciendas;* and the water finally traverses the fields in ten thousand petty streamlets, or *acequias*, managed by a special class of experienced laborers, who have no other duty than to attend to them, preserve them from obstruction, and water the several fields at the intervals they require. Wheat fields ordinarily receive four irrigations between the cessation of rains in September, and the maturity of the grain at the close of November, on each occasion the fields remaining submerged one night, and sometimes during twenty-four hours. When the water is deep enough on the ground, the supply is reduced, until it equals the absorption and evaporation, thus preventing currents over the growing crops, and abrasion of the surface soil.

One result from this method of flooding, is the mineral deposit referred to, which, in some years, amounts to a stratum of three-fourths of an inch. A few years ago, the plain of Maypu, just south of the city, would not yield the planter four-fold of wheat. The surface was little more than gravel and coarse sand. But by treating it in this way, large proportions of it now produce from twenty to forty fold. Could the proprietors be persuaded to use deep or subsoil plows, and free the land from pebbles somewhat, it is impossible to fix a limit to the probable returns from the rich, sandy loam covering the whole surface of the valley. Not an ounce of manure has ever been intentionally placed on any part of it; and yet the successive floodings have elevated several fields more than half a foot.

The only implement for breaking up large pieces of ground, is an almost exact pattern of the old Roman plow. A knee-shaped log of wood, the larger end of which serves as a share, and the smaller as a handle, has a second straight log in it, near the joint, intended as a tongue or draught beam. The angle of the latter with the part forming the share, is varied at pleasure by wooden wedges; and the end of the share or mold-board is shod with iron, so as to form a sort of coulter. A yoke of oxen secured to the rude instrument, will scarcely open a furrow three inches deep, and, in fact, rarely penetrates as deep as a careful farmer would harrow.

From one and a half to two bushels of wheat are sown broadcast on each acre, and covered in by dragging a bush over it, or sometimes a harrow, whose construction is on a par with that of the plow. This takes place in the autumn, as soon after the rains commence as the lands can be prepared. Hill-side fields, above the reach of artificial irrigation, are first attended to, that they may have time to mature under the influence of late spring rains and a warm sun.

The old sickle or reaping hook is still universal. The field is laid off in sections called *tareas* (tasks). The grain is suffered universally to stand longer than in the United States; and the loss by falling out and their mode of handling is considerable.

The description of the method of threshing out the grain is amusing. We copy it entire:

"The threshing out of the grain (*trilla*) is one of the annual events of most importance at the *hacienda*. Proportionate to the amount of ground cultivated in wheat, a spot slightly elevated above the rest is selected, leveled on top, and inclosed by stakes and cords. Sometimes young trees are planted around it though they are never permitted to attain any great height. As fast as the wheat stalks are cut on the field, they are brought to the *era*, the spot thus prepared, and piled up until there is not unfrequently a very respectable-sized hill, even for the mountainous country. One may appreciate this from the fact "La Compania," a single estate formerly belonging to the Jesuists (Compania de Jesus), produces annually more than fifty thousand bushels of wheat. (The trillla of 1851 yielded thirty-two thousand fanegas, or about seventy-two thousand bushels.) As soon as the pile within the *era* is high enough, the inquilinos are summoned, and their friends invited to frolic, the *patron* providing a daily feast as long as the work lasts. In this way, one, two, and even four hundred animals are employed. If the estate does not possess so many, they are either borrowed for the occasion from relations or intimate friends, or are hired in the neighborhood. On the appointed day, they are divided into two equal droves, each of which is again subdivided and retained under control of its particular inquilino. A small part of the pile being raked out so as to cover the entire surface of the era, the horses are driven in squads, each followed by its supervisor, well mounted. When the animals are all arranged, at a shout from *major domo* seated upon the top of the pile, the whole drove is started to a full run; after a given number of turns, the count of which is kept by the major domo, he calls out *vuelta* (wheel); the race in that direction is arrested, and they turn upon their tracks at a like speed. Away they go, round and round again, dust and straw whirling in clouds among the excited mass, maddened by the shouts and gestures of the drivers, and the crowds who throng the stakes or trees of the inclosure. Greatly do the boys love to climb the posts to urge on the half-tamed animals with domestic whips, as if themselves were not sufficiently scare-crows to frighten any ordinary horse. Among so large a number, terrified by shouts, and screams, and occasional lashes, from half a hundred men and boys, half the time buried and blinded by flying straws, it would be wonderful if all retained their footing. Under such circumstances, a stumble is necessarily attended by a piling up of all who follow. But such is the mass of straw, and the extraordinary skill of the natives as horsemen, that they are rarely injured; but as the cat is reputed to do in like cases, they are pretty sure to land on their feet. Knowledge of horses, and horsemanship, begins with early boyhood, and often, too with early *girl*hood; for there are not a few of the gentler sex in Chili, who at times manage their steeds with a skill and fearlessness startling to us astronomical sailors."

FAST DRIVING AT CATTLE SHOWS.

Messrs. Editors:—The enclosed was written by an old and much esteemed friend, in whose opinions I have great confidence, and which in this case coincide with my own. You can give it a place in your paper, if you think proper. Seth Sprague.

On a hasty glance at the Secretary's Report for the last year, I am pleased to notice that yourself and *some* others have queried, as to the expediency of introducing *racing* and *race-courses* at our Cattle Shows. I can not doubt, that all such movements have a demoralizing tendency. They bring in a class of persons to participate, with whom the substantial farmer has no satisfaction in associating. They encourage *betting, gambling*, and other *analogous vices*. It is idle to say, that the speed of the animals should be limited to *four or five miles an hour*. I should as soon think of limiting the velocity of the wind. This is a fair topic for the consideration of the Board of Agriculture, who should have a supervisory view over the expenditure of the agricultural funds of the Commonwealth. If races are to be made, let them be made by *jockeys*, and by them only. Very truly, yours,

Hon. Seth Sprague. J. W. Proctor,

We find the above in the *Boston Cultivator*. We are decidedly opposed to the demoralizing practice of *racing*, and have had occasion heretofore, to express our fears that the "*Trials of Speed*," which have of late been introduced at many of our State and County Fairs, would engender a love for the turf and its attendant evils, which cannot fail to retard the usefulness of legitimate agricultural exhibitions, and if persisted in, to lead ultimately to their abandonment. We are well aware that it is necessary to make Fairs attractive in order to obtain sufficient money to pay premiums and other expenses, but this can be accomplished without a resort to any such questionable practices as the one referred to. A *good* exhibition, except in unusually unpropitious weather, always pays. To doubt it is to doubt the enterprise and intelligence of our agricultural population. Offer judiciously liberal premiums, appoint good judges, select the right place and the proper days for holding the Fair, charge a small fee for admission, and get a good man to deliver an *agricultural*—not a political address, and our word for it, there will be no need to resort to Trials of Speed, Lady Equestrianism, or Baby Shows, to call out a crowd. In alluding to the above letter from Mr. Proctor, the editor of the *Cultivator* (Sanford Howard,) says:

We presume that *trotting* rather than what is technically called "racing," is alluded to. It is a subject deserving the consideration of the managers of Agricultural Societies, both in a moral and physical view, though at the same time not so easy to be adjusted as some may suppose.

The propagation of horses possessing a certain amount of speed in the trot, is obviously worthy of encouragement. Vast numbers of horses are used for purposes where dispatch is an important requisite. Under the new order of things introduced by the use of steam as a motive power, a desire to increase the speed of the horse has naturally followed. But as *extreme* speed is often obtained at the sacrifice of lasting powers, it becomes a question how far that property shall be cultivated. It is well known that many horses which would be of very little value for permanent use, can trot at a rapid rate for a short distance with a light weight. It is plain, therefore, that speed is by no means the only requisite in any *useful* class of horses, and should not of itself merely, be considered a practical merit.

We are aware that against our position may be cited the practice of the United States Agricultural Society. At the last show of this Society, no less than one thousand dollars, besides the premiums on "trotting stallions," was offered for *mere speed* in trotting mile heats. The premiums were nothing more nor less than *purses* for the *fastest* trotting, and in several of the classes the highest were taken by horses which a good judge would scarcely have at any price, for regular business purposes. In some instances the animals were *geldings*, so that whatever might have been their value, nothing could be gained by them to the breed. But considering what they actually were, their incapacity for propagation is not a matter of regret. We leave it for others to point out the advantage to the community, morally or pecuniarily, of expending money in such a way.

For ourselves, we believe that wherever the production of that class of horses denominated roadsters is an object, it is proper for agricultural societies to test, to a certain degree, the speed of animals offered as *breeding stock*. We do not think it necessary that they should be put to their highest speed; but a just decision in regard to the merits of competing animals cannot be made without fairly comparing their action. We would do this in reference to only *one* of the requisites to be considered, and would give no encouragement to speed any further than it was found combined with the points of shape, constitution, and other properties necessary to make a useful and serviceable horse. Is there anything in this which would necessarily lead to betting, gambling, or any other immoral practice?

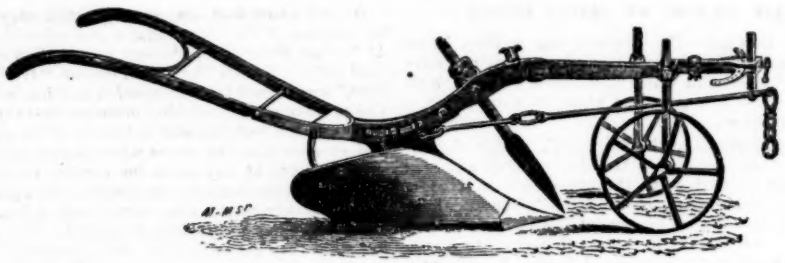
The Ferret for Destroying Rats.—In England, nearly every farmer keeps ferrets for destroying rats and rabbits. In this country they are hardly known, but are just now beginning to receive a little attention. The *Prairie Farmer* says:

"The ferret is a native of Africa, whence it was imported into Spain for the purpose of destroying the rabbit, with which, at that period, that country was injuriously overrun. From Spain it has spread over the rest of Europe, as a domesticated animal. From the earliest times it was used in the capture of rabbits, by being turned muzzled into their burrows. It is now used not only by the warrener, but also extensively by the rat-catchers.

"Some ten years since, there was living near Huron, Ohio, a professed rat-catcher, an Englishman, who, with a cage of ten or fifteen ferrets, and accompanied by several Scotch terriers, visited the farms and villages through Huron county, ready, for a fee of five dollars, to carry death and dismay into the colony of rats and mice inheriting the premises. I was witness to one of these professional operations. The terriers, keen for the sport, were posted about the buildings; then the ferrets, lean, lank and hungry, were let slip into the holes and runaways of the rats.

"Now commenced such scampering, squeaking, racing, bustle and confusion as was truly exciting. If the rats remained in their holes, death was certain; for the ferrets could with ease follow through any opening a rat could pass; and if they attempted to escape by flight their fate was equally sure; for the little active dogs, willing allies of the ferrets, were ready to seize them the moment they made their appearance. Thus a war of extermination was carried on with bloody success.

"Ferrets are very sensitive of cold, and require to be kept snug and warm, especially during the winter, as they perish if exposed to the severity of the season."



HOWARD'S PRIZE PLOW.

HOWARD'S PRIZE PLOW.

At the trial of agricultural implements connected with the Paris Universal Exhibition, Howard's Prize Plow proved to be very much lighter in draught than any other. We believe it is, for medium soils, the best plow in Great Britain. The accompanying engraving will give some idea of its construction. It is made wholly of iron—principally wrought iron. The mold-board is very long and full, and turns a neat, smooth, unbroken furrow, at an angle of about 45°. There is much difference of opinion in regard to the use of wheels. Scotch farmers think they increase the draught of the plow, while many intelligent English farmers express the opinion that by keeping the plow steady, and at a uniform depth, they lessen the draught, or, at all events, that the horses appear to perform the work with less labor. We incline to the latter opinion. Whether this is so or not, there can be no doubt on one point, the wheels lessen the labor of holding the plow, and of turning at the ends. In fact, the plow will run without holding. In the old-fashioned system of three horses tandem, we have seen the plowman walk beside the horses from one end of the field to the other, leaving the plow to take care of itself. The large wheel, which runs in the furrow, and regulates the width, is usually about two feet and a half in diameter; the small wheel, which runs on the unplowed land, and regulates mainly the depth, is about two feet in diameter. The wheels are so attached to the beam that they can be raised or lowered in a minute.

The handles are of great length; and however awkward they may look to an American, and however inconvenient they might prove when plowing round stumps, there can be no doubt that they enable the plowman to guide the plow with great ease.

By means of the rod shown in the cut, all strain is removed from the beam, and the line of draught is much more direct—a point of great importance, as there can be no doubt that less power is required.

Galls on Horses, &c.—One of the best means to prevent galls on horses is to wash the parts most liable to injury with *whiskey saturated with alum*. We find in one of our exchanges the following receipt for an ointment for wounds and sores of all kinds, and for horses, when galled by the saddle or collar, and also for broken chilblains: Take of honey 12 ounces, yellow beeswax 4 ounces, compound galbanum plaster 6 ounces, sweet oil half a pint. Put the honey into a jar, by the fire; then melt the other ingredients, and mix them together; to be spread very thin on linen, and changed twice a day.

Camels on the Overland Route to California.—The camels and dromedaries that our government ordered from the east, to be used on the western plains, have arrived at Indianola, Texas, where they now are to be seen daily marching through the streets. By the last accounts, through an Indianola paper, the camels are employed at the present time, in carrying government freight from Powderhorn to the depot in that place. They carry the great weight of 1,600 pounds each, and with the greatest ease, upon their backs.

The dromedary is employed by the Arabs as their riding nag, while the camel is used as a beast of burden. This is the only distinction made between them. The first will move along at a brisk trot, at the rate of one hundred miles per day, or with a speed approaching that of the railroad cars: and we do not hear of any smash-ups, or trouble from the lack of ventilation. One would think this the very perfection of traveling. The word dromedary means swift. The camel gets over the ground on a walk as fast as a horse at a trot.

Peas for Pork-Making.—A correspondent of the *Ohio Farmer* says:

"Several years ago, I planted some peas in my corn, at the time I gave it the last plowing, which was about the 4th of July. I did this merely as an experiment, to ascertain whether they would mature, and how they would produce without cultivation.

"I was much gratified to find that they produced abundantly, and matured before the fall frosts came in. I am fully of the opinion, that by sowing the right sort of peas, before plowing the corn the last time, pork may be fattened on peas, without any corn, more than the waste corn in gathering the crop."

UNLOADING HAY BY HORSE POWER.

In Mr. Leavitt's celebrated "Cascade Barn," at Great Barrington, Mass., there is an apparatus for unloading hay which lifts up a whole load at a time, and deposits it in the bay, at the rate of a ton of hay each minute. This is a machine, however, that is not adapted to the wants of the generality of farmers. It is true that it will unload *a thousand tons* of hay in a short time, and at little expense; but where, as on most farms, the hay crop is gathered in small quantities each day, such an apparatus is of little or no use. In fact, we question if it will unload half a ton of hay at as little expense as it can be done by hand. We believe it requires six men to attend to it! Although, therefore, it is exceedingly ingenious, and accomplishes the porposes for which it was designed, it is not adapted to the wants of the farmer.

We believe, however, that a machine may be constructed, at a little expense, that would lessen the labor and time required to unload hay. Where hay is put in stacks, it would perhaps be difficult to apply the machine; but where it is put in barns, there appears to be no difficulty in the way. Will not some of our ingenious mechanics turn their attention to this subject?

The accompanying engraving represent a machine for unloading hay that has been used on some farms with success. It is simple, cheap, and can be made by any farmer; but it admits, we think, of considerable improvement.

The machine consists of three pulleys, about 80 feet of ¾-inch rope, and a large fork (fig. 1). The head of the fork is about 28 inches long, and 2½ inches square, made of good hard wood. The handle is 5½ feet long, mortiched into the head, and secured from splitting by a strap of iron clasped round the head, and extending some distance up the handle. The prongs are made of steel, twenty inches long, ⅝ inch thick at the head, and tapering to a point. They may be set in the head at equal distances apart, with a burr attached to screw them up tight. Two ropes, or rods of iron (*a*, *a*), three feet long, fastened to the ends of the head, are brought together at *b*, to which a pully is attached. A small rope (*c*) is fastened to the end of the handle, in length to suit the height of the barn, by which the fork is kept level as it is raised to the top of the mow, where the hay is discharged by slackening the rope.

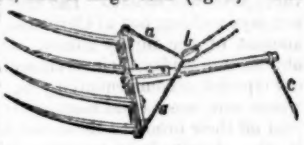


Fig. 1.

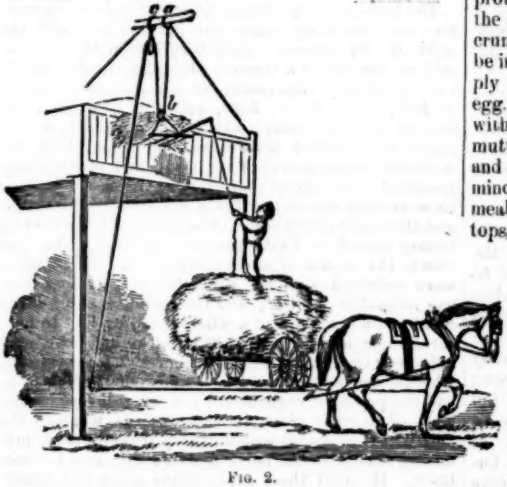


Fig. 2.

In adjusting the machine, let one end of the main rope be attached to the peak of the rafter, about three feet over the bay, as at *a*, fig. 2, which represents a section of the barn; thence let it pass through the pulley *b* on the fork; then through the second pulley *c*; then through the third pulley *d*, fixed to the lower part of the door post, to give a level draft for the horse. One man on the load, another in the mow, and a boy to lead the horse, constitute the force necessary to unload hay in this manner.

THE MANAGEMENT OF YOUNG TURKIES.

We extract the following hints on the treatment of young turkies from *Browne's American Poultry Yard*:—"Some books tell you to plunge the chicks in cold water, to strengthen them; those that survive will certainly be hardy birds. Others say, 'make them swallow a whole pepper corn,' which is as if we were to cram a Newtown pippin down the throat of a new-born babe. Others, again, say, 'give them a little ale, beer, or wine.' We know, unhappily, that some mothers are wicked enough to give their infants gin; and we know the consequences. Not a few advise that they be taken away, and kept in a basket by the fire-side, wrapped in flannel, for eight or ten hours. Why take them away from her? She has undergone no loss, no pain, nor labor; she wants no rest, having had too much of that already. All she requires is the permission to indulge undisturbed the natural exercise of her own affectionate instinct.

"As in the case of young fowls, the turkey chicks do not require food for several hours. There is no occasion for alarm if, for thirty hours, they content themselves with the warmth of their parent, and enjoy her care.

"Give them nothing; do nothing to them; let them be in the nest, under the shelter of their mother's wings, at least eight or ten hours; if hatched in the afternoon, till the following morning. Then place her on the grass, in the sun, under a roomy coop. If the weather be fine, she may be stationed where you choose, by a long piece of flannel list tied around one leg, and fastened to a stake or a stone. But the boarded coop saves her ever-watchful anxiety from the dread of enemies above and behind—the crow, the raven, the hawk, the rat, the weasel—and also protects herself—she will protect her young—from the sudden showers of summer. Offer at first a few crumbs of bread; the little ones, for some hours, will be in no hurry to eat; but when they do begin, supply them constantly and abundantly with chopped egg, shreds of meat and fat, curd, boiled rice, mixed with cress, lettuce, and the green of onions. Melted mutton suet poured over barley or Indian meal dough, and cut up when cold; also, bullock's liver boiled and minced—are excellent things. Barley, or Indian meal, mixed thick and stiff with water or milk, nettle tops, leeks, and many other things might be added to the list; but it is probable that a few of these may now and then be refused by some fanciful little rogues. Little turkies do not like their food to be minced much smaller than they can swallow it, indolently preferring to make a meal at three or four mouthfuls to troubling themselves with the incessant pecking and scratching in which chickens so much delight. But at any rate, the quantity consumed costs but little; the attention to supply it is everything.

"The young of the turkey afford a remarkable instance of hereditary and transmitted habits. From having been tended for many generations with so much care, they appear naturally to expect it almost as soon as they are released from the shell. We are told that young pointers, the descendants of well-educated dogs, will point at the scent of game without any previous training; and so turkey chicks seem to wait for the attention of man before they can have any experience of the value or nature of those attentions. Food which they would refuse from a platter, they will peck greedily from the palm of a hand; a

crumb which would be disdained if seen accidentally on the ground, will be relished from the tip of the finger. The proverb that 'The master's eye fattens the horse,' is applicable to them, not in a metaphorical, but in a literal sense; for they certainly take their food with a better appetite if their keeper stays to distribute it, and see them eat it, than if he merely set it down and left them to help themselves.

"Abundant food for the mother and her young, constant attention to their wants, are the grand desiderata in rearing turkies. An open glade, in a grove, with long grass and shrubs here and there, is the best possible location. A great deal is said about clear and fresh water for turkies; but I have observed that if left to their own choice, they will be as content and healthy with the rinsings of the scullery, or the muddiest pool, as with the purest spring. The long grass will afford them cover from birds of prey; the hen will herself drive off four-footed enemies with great courage. Insects, too, will abound in such a situation. When the little creatures are three or four days old, they will watch each fly that alights on a neighboring flower, fix it with mesmeric intensity, and, by slow approach, often succeed in their final rush. But in the best position that you can station them, forget them not for one hour in the day. If you do, the little turkies will for a time loudly yelp,

"Oh, then remember me!"

in notes less melodious than those of a *prima donna*, and then they will be sulky and silent. When you at length bring their delayed meal, some will eat, some will not. Those that will not, can only be saved by a method at all other times unjustifiable, namely: by cramming; but it must be done most gently. The soft crumb of bread rolled into miniature sausages should be introduced till their crops are full. For drink, many would give wine. I advise milk. The bird wants material, not stimulant.

"The time when the turkey hen may be allowed full liberty with her brood, depends so much on season, situation, &c., that it must be left to the exercise of the keeper's judgment. Some, whose opinion is worthy of attention, think that if the young are thriving, the sooner the old ones are out with them the better, after the first ten days or so. A safer rule may be fixed at the season called 'shooting the red,' a 'disease,' as some compilers are pleased to term it, being about as much of a disease as when the eldest son of the turkey's master and mistress shoots his beard. When young turkies approach the size of a partridge, or before, the granular fleshy excrescences on the head and neck begin to appear; soon after, the whole plumage, particularly the tail feathers, start into rapid growth, and the 'disease' is only to be counteracted by liberal nourishment. If let loose at this time, they will obtain much by foraging, and still be thankful for all you choose to give them. Caraway seeds, as a tonic, are a great secret with some professional people. They will doubtless be beneficial, if added to plenty of barley or Indian meal, boiled potatoes, chopped vegetables, and refuse meat. And now is the time that turkies begin to be troublesome and voracious. What can you expect else from a creature that is to grow from the size of a robin to 12 or 15 lbs., in eight or nine months? They will jump into the potato ground, scratch the ridges on one side, eat every grub, wireworm, or beetle that they find, and every half-grown potato. From thence they will proceed to the rutabagas; before the bulbs are formed, they will strip the green from the leaves, thereby checking the future growth of the root. At a subsequent period, they will do the same to the white turnips, and here and there take a piece out of the turnip itself.—They are seldom large enough before harvest to make so much havoc among the standing grain, as cocks, hens and guinea fowls, or they have not yet acquired the taste for it; but when the Indian corn begins to ripen, in August or September, and the young wheat comes up, in October or November, they will exhibit their graminivorous propensities, to the great disadvantage of the farmer. The farmer's wife sees them not, says nothing, but at Christmas boasts of the large amount of her turkey money. One great merit in old birds (besides their ornamental value, which is our special recommendation) is, that in situations where nuts, acorns and mast are to be had, they will lead off their brood to these, and comparatively (that is all) abstain from ravaging other crops. It is, therefore, not fair for a small occupier to be overstocked with turkies (as is too often the case, and with other things also), and then let them loose, like so many harpies, to devastate and plunder their neighbors' fields.

SCAB OR ITCH IN SHEEP.

At a late meeting of the Royal Agricultural Society, Prof. Simonds, Veterinary Surgeon to the Society, delivered an interesting article on the parasites of our domestic animals. We extract a few of his remarks on the *acarus*, a mite which produces itch in sheep.

The scab in sheep occasions heavy losses every year. Its cause for many years was not known; and the merit of our present satisfactory information on the subject, was due to a German physiologist, who clearly proved the wide distribution of acari or mites, in dirt or filth, sugar, cheese, flour, and almost every other form of vegetable matter—there being scarcely a substance not affected with them. He found that the male and female acarus of the horse and of the sheep possessed well-defined characters in the case of each of those animals, the former being the cause of the mange, and the latter of the scab. The study of their natural history would, in Prof. Simond's opinion, be the best clue to the means of their destruction. These mites were endowed with the capability of traveling from one animal to another; and the scab disease of sheep was known to extend to a whole flock, leading to fatal chronic disease. Since 1848, Prof. S. had instituted numerous experiments, for the purpose of ascertaining whether the mites belonging to one class of animals, had the power of engendering the same disease on animals of another class; in other words, whether the mite which produced scab on sheep was capable of producing mange on the horse and the dog, and the contrary. He tried these experiments again and again, with every variety of circumstance, but entirely failed to produce such results. It had, however, been alleged that in Germany success had attended similar efforts.

The acari, or mites, varied much in shape. Pediculi, or lice, existed in the greatest variety. They could only live, however, in that particular part of the animal's body to which they were adapted.

He then referred to the period which elapsed between the deposition of the acari on the skin of sheep and the development of the scab disease, as a question affecting

the purchasing of sheep, and the liability attached to that transaction. First a slight redness came on the skin; albuminous fluid was exuded, which matted together the adjoining wool. In a few days, definite pain was felt by the animal, which violently attempted to scratch itself by rubbing the part against any resisting object. The irritation extended to ten or twelve inches. The disease advanced with rapid progress. Acari had traveled over other parts of the body. In sixteen days, fifty or sixty eggs of the acarus were found at the base of the wool. Large, thickened crusts, of a white appearance, were formed. The health of the animal and its skin became generally affected. Large scales of scabs ensued, which, on being raised, a great number of acari could be detected. Inflammation had ensued on the skin. The itch in the human subject arose from the same cause. The acarus burrowed beneath the scale of the epidermis or outer skin; the itch-mite insinuated itself within the skin; while the mites of the horse and the sheep made their attacks upon the skin.

Remedies.—Prof. Simonds recommended common mercurial ointment, rubbed down with three times its weight of lard, as directed by Youatt.

"The quantity of ointment applied to each sheep may vary from a few drachms to two ounces, one-third of the quantity being used for a lamb. The sheep that has been thus dressed, may be considered, at least, as incapable of infecting any of the others. The itching will soon subside; the acari will either be destroyed by the mercury as soon as they appear on the skin, or it will penetrate to their deepest recesses, and poison them there; or if at the expiration of ten days, there should continue to be much uneasiness or itching, another but a lighter dressing may take place. This ointment will have a kindly effect on the roots of the wool, encouraging their growth and that of the natural yolk, and forming a comfortable and most useful defence against the cold of the ensuing winter."

Professor Simonds remarked that arsenical applications were more potent, but they required great care. The best mode was that of sprinkling a solution of arsenic, again and again, over the diseased parts. The preferable form of such solution, was that of arseniate of potash, blended with vegetable infusions, such as those of foxglove, stavesacre, henbane, dock roots, &c. He recommended two ounces of arsenic, and two ounces of carbonate of potash, to be boiled together in a quart of water until dissolved, when a further quantity of water was to be added to make up a gallon of solution. To this gallon of solution, a gallon of vegetable infusion was to be added, made by pouring a gallon of boiling water over four ounces of foxglove leaves, and allowing the infusion to remain till cold, when it is poured off. These two gallons of liquid constituted a safe agent, and one of the most potent remedies for scab. Half a pint of it, at intervals of a few days, was to be sprinkled (from a bottle, through a quill in the cork) on the skin at the back and sides of the sheep. Two or three dressings would be found sufficient to cure the most inveterate cases of scab in sheep.

Rats.—A good rat trap may be made by filling a smooth kettle to within six inches of the top with water, and covering the surface with chaff. The first chap who gets in makes an outcry because he cannot get out; and the rest coming to see what the matter is, share the same fate.

Manuring was known, practised, and considered essential to good husbandry in the fifth century of our present era; perhaps we may yet give a history of manuring from the earliest to the present day.

REMEDY FOR HOVEN IN CATTLE.

The *Louisville Journal* recommends the following remedy for hoven in cattle:

"As soon as you discover the affection, which you will know by their swollen appearance and uneasy movements, make a stout straw rope, well twisted, about as thick as your wrist; turn the cow into her stall, and putting the rope, into her mouth, tie it over the top of her head, behind her horns; secure it well, and turn her loose. In her endeavors to get rid of the straw rope, she will so turn up her head as to allow the escape of the gas, and in fifteen minutes she will be relieved.

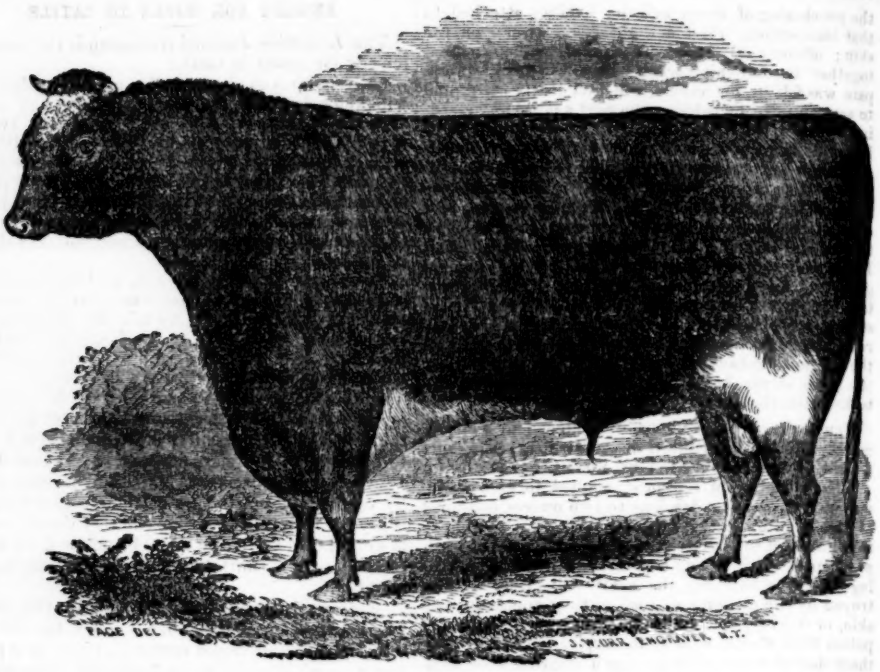
"Some five or six years ago, we found six of our cows thus affected at the same time; having somewhere read of the above remedy, we tried it, with immediate success; the cattle were so much affected, that they must have died if not relieved. We have seen it tried several times since, and always with success."

In the spring of the year, when cattle are turned into clover for the first time, they eat greedily; and if the dew is on, or the clover is wet from rain, it is apt to ferment in the stomach and to produce hoven. Prevention is better than cure; and farmers should be very careful not to turn cattle into clover until it is dry; or if the weather is so showery that the clover is wet all day, the cattle must be allowed to stay in the field only a short time, and to eat only a small quantity.

Many remedies are recommended for this disease. If the animal is not too much swollen, two or three table-spoonfuls of liquid ammonia, given in a pint of water, or whisky and water, frequently gives immediate relief. Two drachms of chloride of lime, in two quarts of warm water, is also an excellent remedy. If neither of these are at hand, a quart of lime water, as strong as it can be made, will be found useful.—The dose should be repeated in about twenty minutes, if the animal is no better. Lime water can readily be made by pouring boiling water on quick lime, stirring it well for a few minutes, and then allowing it to settle. If a little of the lime is mechanically suspended in the water, it will do no harm.—After the animal is recovered, it is well to give a quarter of a pound of Epsom salts to allay inflammation.

Sheep and Misfortunes.—Perhaps there are no other animals so imitative in their disposition as sheep. Not only will they leap over a fence in imitation of one that has been frightened over, but if the fence should be knocked down before all the flock is over, the remaining portion will leap just as high as though the fence was there. Longfellow thus alludes to this ovine characteristic:

Never jumps a sheep that's frightened
Over any fence whatever,
Over wall, or fence, or timber,
But a second follows after,
And a third upon a second,
And a fourth, and fifth, and so on—
First a sheep, and then a dozen,
Till they all, in quick succession,
One by one have got clear over.
So misfortunes, almost always,
Follow after one another—
Seem to watch each other, always!
When they see the tail uplifted,
In the air the tail uplifted,
As the sorrows leapeth over,
So they follow, thicker, faster,
Till the air of earth seems darkened,
With the tails of sad misfortunes.



SHORT HORN BULL DUKE OF GLO'STER.

SHORT HORN BULL DUKE OF GLO'STER.

This remarkable bull was bred by the Earl Ducie, and at the great Tortworth sale in 1853, was purchased by Messrs. Morris & Becar, for the sum of *three thousand three hundred and fifty dollars*, ($3,350.) If we mistake not, higher prices were obtained at this sale than at any other sale in England. Forty-nine cows and heifers sold for £6,867, or an average of about $700 each; thirteen bulls and bull calves brought £2,494 16s, or an average of about $950 each. "Duke of Glo'ster" was the gem of this celebrated herd, and commanded the highest price.

Last summer we had the pleasure of examining the "Duke of Glo'ster" at Mt. Fordham, and have no hesitation in saying he is one of the best bulls we ever saw. We annex his pedigree:

Red; calved September 14th, 1850; bred by Earl Ducie. Sire Grand Duke (10284.) Dam Duchess 59th by 2d Duke of Oxford (9046)—Duchess 56th by 2d Duke of Northumberland (3646)—Duchess 51st by Cleveland Lad (3407)—Duchess 41st by Belvidere (1706)—Duchess 32d by 2d Hubback (1423)—Duchess 19th by 2d Hubback (1423)—Duchess 12th by The Earl (646)—Duchess 4th by Ketton 2d (710)—Duchess 1st by Comet (155)—by Favorite (252)—by Daisy Bull (186)—by Favorite (252)—by Hubback (319)—by J. Brown's Red Bull (97).

Foxes Killing Lambs.—I have a remedy which has never failed for the last fifteen years in practice, to wit: Mix sulphur and lard, and rub it on freely about the necks of the lambs. One application is usually sufficient. A. B. Wilcox—*Harpersfield, N. Y., in Country Gentleman.*

CARE IN STOCK-BREEDING.

Mr. Editor:—The June number of the *Farmer* is at hand, and its contents noted with interest.—Was much interested by a few remarks on breeding animals, under the head, "Animals become Parents too Early." I am convinced that carelessness in breeding, or *accidental breeding*, causes one of the greatest leaks in the farmer's purse. It must be either that farmers do not *think*, or that they act contrary to their own convictions in this important matter. They, of course, know, that if like does not always produce like, the tendency must be in that direction. This subject stands more prominently in my mind from my observations in this vicinity this season. The cows are served by yearling males of small size, and in low condition, consequently totally unfit for the purpose of propagation.

It would be natural in such a case that the progeny should be small, and lacking in many qualities which should characterize an animal which is to be reared as a source of profit; *and such is in fact the case*—the calves being small in size, with narrow loins, small muscles, and all the other signs denoting deficient stamina. I am fully convinced that it will pay to use a good breeder, even if the calves are to be used as veal. But if the animal is to be reared, either for work or the dairy, then the form and handling qualities become of the first importance.

I have known some dairies in which almost every animal was deficient in those points denoting a good milker, having long limbs, heavy necks and forequarters, and large horns, and where owners were going to sell out, being convinced *there was no profit in dairying.* At the present prices of veal, it seems

worse than folly to raise a calf that is not *about right*. I have found by experience that a pair of oxen with short, straight limbs, heavy quarters, well-ribbed home, and possessing a good muscular development, and handling *right*, will do about twice the labor, and fatten with half the expense, as a yoke of *sharky* animals. I consider it of the first importance that a breeding male should be kept in *condition*, as the jockeys term it; that is, its muscular powers should be kept up nearly to a maximum point. Some may say, "Well, well, I cannot afford to be so particular." But bear in mind that *attention to little things* is important to success; and it is the man who *thinks*, more than the man that works, who finds his calendar sheet all right at the end of the year. B. W.—*St. Johnsbury, Vt.*

DISEASE AMONG THE HOGS.

A CORRESPONDENT of the *Prairie Farmer* says:

"A great many farmers at the West have lost hogs by a disease which they call the consumption. Hogs are troubled for breath, lose their appetite, and finally become so poor and weak that they cannot get up. Shortness of breath and starvation are the only symptoms of the disease. None ever recover, although some live months after being seized. The disease has been confined chiefly to hogs fed principally on corn ground with the cob and fed in the dry state, leaving the hogs to go to the trough and drink water with the cattle when they needed it. What is the experience of farmers further east on this subject?"

In the April number of the *Genesee Farmer*, we alluded to a somewhat similar disease which had made sad havoc among the young pigs in this neighborhood. It was thought by some farmers that the disease was produced by over-feeding the sow; and at the request of our friend, Mr. HOBBIE, of Irondequoit, we wrote to Col. L. G. MORRIS, asking him to give us some account of his method of managing breeding sows. We have received the following letter in reply:

MOUNT FORDHAM, May 10, 1856.

JOSEPH HARRIS, ESQ.—*Dear Sir:*—Yours of the 5th is received. Sows carrying their young should be well fed, but not over fed—just so as to keep their condition neither fat nor thin. Six weeks previous to the time of dropping their litters, they should be kept alone, in a good, dry pen, so as to become well-settled in their apartments and bed, and get a home and settled feeling. A week before the pigs are to be born, she should be fed rather lighter than previously; and after the birth, she should have some cold water and some ears of corn, to allay her hunger and thirst, but not so much, nor such kind of food, as to increase her supply of milk too rapidly, until after the little ones have got the milk fairly going; after which, increase the feed as the pigs increase their demand for it. Very little bedding should be kept under the sow, one week previous to pigging, and until after the pigs get strong enough to extricate themselves from entanglement in the straw, by which means they may be laid over and killed by the mother. Kind and gentle treatment should always be used at all times and under all circumstances, so that the mother and pigs are never frightened and startled suddenly by those that are in charge, or lookers at them.

I have gone more into detail than was necessary or required. I remain, yours truly, &c.,

L. G. MORRIS.

ATTEND TO THE LEGS OF YOUR HORSES.

CONSIDERING the important functions assigned to the legs and feet, upon which a great portion of the horse's value depends, it is a matter of some surprise that more attention is not bestowed on the subject. There are many breeders who never think of inspecting them till the animals are about to be broken, or if they observe any imperfections, they leave the remedy to its fate. The legs of young horses may be justly compared to willow twigs; you may train them to almost what form you please. By careful and judicious treatment, many defects may be relieved or corrected, if attacked in the earliest stage, before the parts have assumed an unyielding texture. Many of the imperfections to which the form of the leg is susceptible, may be traced to a portion of the hoof having been broken, worn away, or clipped off. In the event of such accident, the opposite side of the foot grows more luxuriantly, and the weakest portion, or lower side, having to sustain an increased weight, an uneven bearing for the foot is thus established. This will assuredly cause the leg to grow crooked, and very probably occasion a turning in or out of the toe.

The irregularity of shape is often seen in one leg, while the other is well formed. The pastern joints, in many cases, evince a disposition to grow too upright, or on the other hand to assume too much obliquity. The same principle which accidentally causes a limb to take an unfavorable growth or form may be adopted to restore it to its proper shape, providing it is attended to in time. Thus, if the inside of the near fore foot of a colt or young horse be broken off or worn down, it will cause the animal to tread more heavily on the inside than on the out, and the leg will become bent in consequence. To correct this it is only necessary to reduce the superabundant portion of the foot with a drawing knife, or carp, so that the limb may have an even bearing. When the pasterns grow too upright, the heels require to be lowered; and the toes of those which are too oblique must be shortened. The texture of the hoof varies considerable in different animals. In some measure it is constitutional; and it is likewise affected by the state or condition of the land upon which the animal is reared.—*Mark Lane Express.*

INDIGESTION IN FOWLS.—MR. EDITOR: I have a beautiful Poland rooster, which was taken sick last February. I read many authors about diseases among fowls, and tried many remedies; but nothing seemed to do any good. He was still loose in the bowels; his crop remained hard; and he eat nothing. On the eleventh day he took no notice of anything; would not move unless I moved him. I shought he would die before morning. I therefore *opened his crop*, took out everything that was in it, and sewed it up again; and the next morning he began to eat, and is now the finest bird around. SARAH S. SARGEANT.—*Buffalo, N. Y.*

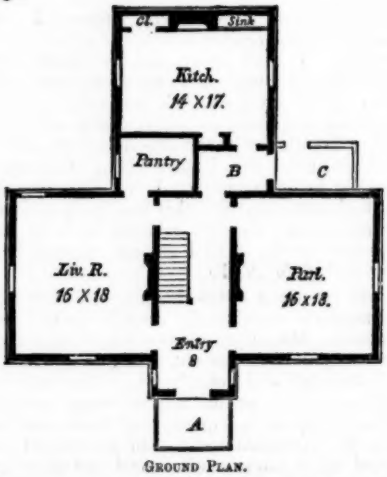
There are many instances on record showing the good results of opening the crop in similar cases to the above. Mobray mentions a hen which sat about in corners, and did not eat, drink, or evacuate, and yet looked full, and not diseased. Her crop being totally obstructed, on an incision being made from the bottom upwards, a quantity of beans was found, which had vegetated there. On the wound being stitched up, it immediately healed, and little inconvenience remained.

IF YOUR CALVES ARE TROUBLED WITH VERMIN, give them a table-spoonful of sulphur every other morning, for a week.

A SYMMETRICAL COTTAGE.

Whoever loves symmetry and the simpler kind of cottage beauty, including good proportion, tasteful forms, and chasteness of ornament, we think, cannot but like this little design, since it unites all these requisites. It is an illustration of a cottage made ornamental with very trifling expense, and without sacrificing truthfulness to that kind of tasteful simplicity which is the true touchstone of cottage beauty. This cottage is designed in the rural Gothic or English manner, but much modified, so as to adapt it to almost any site.

The light, open porch of this cottage may be omitted without injuring the design; but it gives the front an air of so much feeling and refinement, aside from its manifest utility, that we should always hope to see it adopted by those about to execute the design.



Ground Plan.

The kitchen is on the same floor with the living-room. Many families would prefer to use the room marked "parlor" in the plan, as a bed-room, and, if so used, the cottage would be a very complete one for a small family—having living-room, bed-room, pantry, etc., on the same floor. But to others who would prefer to have no bed-room on this floor, a parlor would be looked upon as far more important.

In the plan, A is the porch, from which we enter the hall or entry, 8 feet wide, with the two best rooms—each 16 by 18 feet, on either side of it. Connected with the living room, in its rear, is a good pantry. B is the back entry, communicating with the kitchen. C is the back porch, which may be left open in summer and enclosed in winter, when it serve as a place for coal and wood. On one side of the kitchen fire-place is a closet, and on the other, a sink, into which, if possible, a water-pipe should be brought.

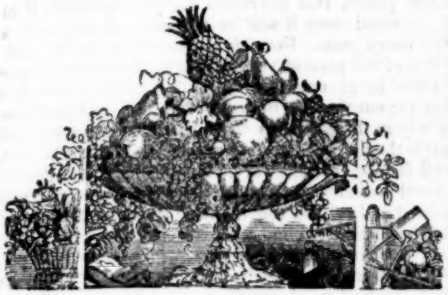
The first story of this cottage is supposed to be 10 feet, and the chamber story 5 feet on the sides, and 8 feet in the middle of the rooms. The pitch of the roof is a right angle.

As the entry, or hall, of this plan is wide, and the arrangements both simple and convenient, we think it will be difficult to build a more agreeable cottage, for the sum proposed, than the present design.—Though picturesque in its exterior, it is not so much so as to *demand* a highly rural or picturesque site, but would look equally well either in the suburbs of a town or in the midst of the country.

The chimneys in the elevation show one of the forms made in Garnkirk fire clay. These are sold by the importers (Jas. Lee & Co., New York and Boston) at from $4 to $6 each. The base of this chimney (of common brick work) should be carried up a couple of feet above the level of the ridge of the roof before the chimney-tops are set.

The exterior of this cottage is vertical boarding—of planed and matched floor plank, about ten inches wide. The window frames are from three to three and a half feet—inside measure—with a centre mullion and latticed sashes. The roof of the porch is nearly flat and roofed with tin, so as to form a balcony to the bed-room window over it.

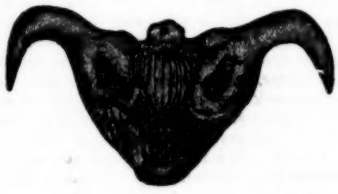
The house is, of course, filled in with brick on edge, set flush with the outside of the frame, and the inside walls plastered on the face of the brick.



Horticultural Department.

THE LING OR WATER CHESTNUT.

We are indebted to Messrs. B. B. Redding & Co., of the *State Journal*, Sacramento, California, for nuts of the Chinese Ling or Water Chestnut, (*Trapa bicornis*). They are a great curiosity, having the exact form of a ram's horn. They have the appearance of an elaborately carved piece of dark brown wood. The covering is very hard and consists of woody fibre. The nut is dry and hard, of a whitish brown color, very farinacious and quite palatable, having the same shape of the pod. The accompanying engraving will give a good idea of this remarkable nut.



The *California State Journal*, translates an article in regard to the plant and the use of its fruit, from the *Paris L' Illustration Journal Universel*, from which we condense the following :

The Chinese are celebrated for employing as food a great variety of aquatic plants—plants which are in that densely populated country the more precious because they require but little care for their multiplication, and render useful and subservient to the interests of man, places which are entirely unfit for any other kind of agriculture.

Among the most valuable aquatic plants grown by the Chinese is the *Trapa bicornis*, called by them the *Ling*. The nut of this plant forms the principal article of food for whole districts where the rice crop is scarce. The *Ling* is grown chiefly in stagnant water, or those having but a very slight current. It is sown in the fall in the shallow parts of the lakes, in the swamps, and on the margins of the rivers, where it receives the full blaze of the sun, as the more the plant is exposed to the heat of summer the more prolific it is, and the better the quality of its fruit.

The unripened nut is very agreeable to the taste, and is much used by the Chinese as a refreshment for the sick. When ripened it is boiled and eaten as we do chestnuts, or dried, hulled and ground to meal, which is used to make bread, gruel, &c., &c. The green fruit is also preserved in large quantities and used as sweetmeat for desert.

The plants bloom from June to August, and the ripe nuts are gathered in September and October.

A French author in describing the harvest says:

'Nothing is more curious than to see the women and children embarked in tubs which are used as boats to gather the crop. The noise, the songs, and the cheers of those strange gatherers reminds me of the joyous vintages in France.'

When all the tubs have been filled they are tied to one another in a long row, and a boat tows them to their place of destination. The reason tubs are used instead of boats is to prevent tearing the immense *lianes* or branches formed by the plant, which produces a large crop the succeeding year.

The *Trapa bicornis* is cultivated in all the different provinces, and is variously known as *Ling*, *Pi-Tsf* and *Ki-Chi*; and a less valuable variety, the *Trapa natans*, is also grown to some extent.

The *Liene Hoa* (*nymphæa nelumbo*) is also extensively cultivated for food, the fruit being dried, ground into flour, and then boiled and served up with salt and vinegar. It makes its appearance on the most aristocratic as well as the most common tables in the Empire. This plant is described as being very beautiful, and the scene in June is said to be magnificent, when over a broad surface immense quantities of the *Liene Hoa* spread like a carpet on the waters of a lake. The flowers, striped, pink and white, are the size of a poppy, and fill the atmosphere with a sweet perfume, and gladden the eye by the freshness of their looks and the brilliant beauty of their leaves.

The writer from whom the above information is obtained, in closing his remarks on the water plants of China, says that the Government appoints botanists in every section of the country, whose only business is to benefit the poor by making out every plant fit for the sustenance of man; to make perfect drawings for its identification; to describe it and the manner of its cultivation and the mode for preparing it for food, and to see that these descriptions are thoroughly circulated throughout the district.

The *State Journal* says this nut is found in a cooked state on the stall of almost every Chinese vender of edibles, in Sacramento, and remarks:

"We do not anticipate that the *Ling* will ever be of any material use in this State, yet as we have the necessary sloughs, and swamps, and the proper climate, we hope that some of our amateurs will search for sound nuts and experiment upon them. It is possible, if the plant is prolific, and our Chinese population remains with us, that the *water-chestnut* may become a valuable addition to our agricultural products. At any rate it is worth trying, even for the novelty of its appearance."

Pepper Grass vs. Striped Bugs.—It is said that a few plants of pepper grass in a cucumber hill will keep off the yellow bugs. Have any of our readers tried it?

Age of the Rose Tree.—Shengel mentions a rose tree, still living, which is upwards of one thousand years old.

THE DEUTZIA GRACILIS

This splendid little flowering shrub, I think, may be said to be perfectly hardy, it having stood the past winter without injury, with no protection whatever, save a little covering of snow. It came out this spring with every bud sound, and is flowering profusely. Its flowers are produced in bunches, upon the ends of branches of the present year's growth, from the best ripened wood of the previous year.—They resemble bunches of orange blossoms, of pure whiteness, minus the perfume. Its height is from nine to eighteen inches, possibly two feet; but owing to its recent introduction, and the great demand on the nurserymen for all they can propagate, I have not been able to see any larger. I have grown it in the green-house, in the hot-house, and in the open ground, the past two years, and eighteen inches seems to be a good season's growth for it. I am trying now to train up three or four as standards for winter flowering, which, I think, will be very ornamental: but owing to its naturally dwarfish habit, and its tendency to throw out suckers, as a bush, their progress, I must confess, is rather slow. After having grown eighteen or twenty inches, their tips become dwindling, and seem to grow "beautifully less." But it may be owing to a deficiency of light, for they are growing in the forcing house, beneath the vines. It is equally desirable in the forcing-house, the green-house or conservatory, the parterre, and the shrubbery. As a window plant, there is none more beautiful in winter; and none will last longer in perfection under the same circumstances. But for this purpose, it must be brought slowly into flower in the forcing-house, or in the green-house, before its introduction to the drawing-room; otherwise, the great depression of the atmosphere in the night usual to drawing-rooms, will make it flag too much.

The best soil for growing it in is rich, turfy loam, and part decayed leaf-mold, and a little clean lake sand, with good drainage. Its time of flowering (out of doors) is from the last week in May to the last of June. It is now (June 14) beautifully in flower. But, indoors, with a succession of plants to be brought forward to the forcing-house at intervals of two or three weeks, it may be had in flower from the first of February to the last of June. For flowering in February, it must be brought into the forcing house early in December. After flowering, they should be shifted into pots of about two sizes larger than those in which they flowered. After they have been shifted about a week, shoots from the bottom will be seen running up; the old tops which have flowered can then be cut out; and the young ones, as they advance, should be tied to small sticks, to keep them in their proper places. They must be kept in the cool end of the hot house, or warm part of the green-house, to keep them steadily growing until all chance of cold weather is gone (first week in June,) when they may be plunged in their pots up to the rim, out of doors, there to remain until October or November, when they must be taken up and cleaned, and the soil in the pots top-dressed a little (being careful that the drainage is perfect), and placed in the coldest part of the green-house, or any other place, where it does not actually freeze, from where they can be brought forward as wanted.

This second year they will flower earlier than they did the first, if necessary. If it be desirable to have large plants, this operation can be repeated; if to have small ones, it will be necessary to propagate a few every year. For this purpose, take healthy cuttings of the present year's growth, about three or four inches long; cut them to a bud close under two leaves; cut the two bottom leaves off; and put them firmly in the earth up to the next two leaves; and give them a good watering once at first. The best soil for the cuttings will be equal parts of well-decomposed leaf-mold, and clean lake or river sand, well mixed and rubbed together, and pressed rather firmly in the pots. The most convenient sized pots will be about three or four inch ones, which should be perfectly clear and well-drained, by putting about an inch of broken charcoal, or other porous matter, in the bottom. When planted, they must be placed in the warmest part of the hot-house; the floor on which they stand kept moist and covered with a bell-glass; or, what is better, placed in a gentle bottom heat, on a hot-bed, and shaded from the sun. If properly managed, every cutting will grow. When they have become too large for pot-culture, turn them out in the open ground, where they will take care of themselves. J. Salter, Gardener to J. F. Bush, Esq.—*Rochester, N. Y.*

The Vinegar Plant.—The *Rural Intelligencer* says:

"We spoke last April of a vinegar plant given us by a lady friend in Webster. We took it home to our office, procured at an apothecary's store one of his largest glass jars, holding some two gallons, filled it with common sweetened water, committed the plant to it, and there it has been ever since, spreading its folds upon the surface, till it was evident the vinegar had become strong enough almost for the death of the plant; whereupon, this week, we removed the original sweetened water, and supplied its place with new, for the plant to work upon. On drawing off the vinegar, it was found very strong indeed—almost as strong as lye—and for ordinary table purposes it will require to be diluted with fresh water. There is no mistake about it: this vinegar plant will keep our family in the purest vinegar as long as we shall need such an article."

Effects of the Past Winter on Evergreens. The *Ohio Farmer*, published at Cleveland, Ohio, after remarking that the past winter has been severe upon evergreens, states that "even the cedar of Lebanon, thought to be hardy, presents a miserable appearance—its foliage completely killed, and only a few, small, green buds scattered here and there over the branches." The Chinese arbor vitæ (*Thuja Orientalis*) "got pretty well browned up, but is now recovering." It was slightly affected in exposed situations in this vicinity. The Norway spruce never lost a leaf, or changed in the least; nor did any of the conifera from the north of Europe. The Swedish juniper also stood the winter well. We should be glad to hear from other sections.

Molasses for Caterpillars.—A correspondent of the *New England Farmer* has found the use of molasses very effectual in destroying caterpillars. When they are in the nest, he has smeared it over with molasses; and none have ever escaped from it. They cannot travel over a limb where the molasses has touched; and it does not in any way injure the tree. He likes it better than gunpowder, soap suds, whale-oil soap, or even the thumb and finger!

CULTURE OF THE JAPAN LILY.

This superb flower, as its name implies, is a native of Japan, and like a great many splendid things from the same country, such as Forsythia veridissima, Weigelia rosea, Dielytra spectabilis, &c., is perfectly hardy. It blooms at a time when flowers are very scarce—about the middle of August—and this property, combined with their magnificent appearance and exquisite perfume, make them inestimable in every place having the least pretension to the name of garden.

There are three distinct varieties at present in cultivation, although doubtless they will soon be increased in number, as they are easily raised from seed. The white Japan Lily *(Lilium lancifolum album)* is a beautiful white, with raised spots of the same color. The red, *(L. L. rubrum)* is a beautiful crimson, with white margin, and covered with darker crimson dots; and the variety called *Punctatum* is white, with crimson spots; but the two first named varieties are the most desirable.

About the middle of May is the time for planting them. They should be planted in beds, or in rows about one foot apart. If in rows, a trench should be dug about six inches deep, and half filled with good leaf mould and sand. The bulbs should then be carefully planted, taking care not to pull off the old roots but spread them out nicely; then throw in a little more leaf mould and sand, and cover up with good fine soil. They will then be in about three inches deep, which is the proper depth to plant them. If in beds, the soil should be dug out six inches, and leaf mould and sand put all over the same depth as in the rows, and the bulbs covered in the same manner. Keep the beds clean and free from weeds, and the bulbs will take care of themselves, and no trouble need be taken with them, except occasional watering in dry weather, till they begin to flower. Then, especially if the weather is dry, they should receive liberal waterings with liquid manure, for these lilies delight in a rich soil, and the flowers will be much finer and better if they are treated in this way.

Although perfectly hardy, most people, even now, take them up every autumn; but they will increase much faster and, if in good soil, be much finer if left in the ground, than they would be if taken up. As soon as the flowers are gone, the tops begin to die off, and as soon as this takes place, the bulbs are fit to be removed or taken up.

It is a common thing in England to see one of these lilies with thirty fully expanded flowers on it; and when a plant reaches these dimensions, it is truly a magnificent object. W. T. Goldsmith—*Rochester, June* 20, 1856.

Buckwheat a Cure for the Striped Bug.—As our cucumbers, melons, &c., always suffer more or less from the striped bug, I would desire to give publicity to a cheap, and, in my opinion, a certain remedy; which is nothing more than to put in the hill with your seeds a small handful of buckwheat, leaving the buckwheat to grow until the melons, &c., have put forth the second vine leaf, and my word for it, neither the bug nor ground flea will trouble the vines, to their injury. I have this season seen a patch where a few hills had been left without the buckwheat, which were entirely destroyed—even also the second planting—while those with the buckwheat guard were vigorous, and not a plant touched. D.—*Gates.*

Are we Raising too Much Fruit?—The *Country Gentleman* thinks not; and his opinion is entitled to consideration. Hear what he says:

"The *demand* for fruit is at present increasing more rapidly than bearing trees; prices of the best pears have at least doubled within a few years; the finest *winter* varieties now sell readily, in the large cities, at one to three dollars per dozen; and the result of their sale, and consequent introduction to notice, is to make them better known and more sought after.

"The present appearances are, that it will yet be a long time before the market will be over-stocked with them, and that prices will rather advance than recede. But those who would make their cultivation profitable, must not expect that planting out trees, simply, will answer the purpose; skill, knowledge, and attention must be brought into requisition. But while neglect will certainly end in failure, there is probably no business where well-directed intelligence promises more certain and more ample profits than the extensive culture of the finest fruits for market."

Attend to the Caterpillars.—Florists rarely think *soon enough* of the trouble moths will bring them, in their parterres and lawn shrubberry, and delay is often ruin. If the *nests* have been thus far neglected, a little attention *now* to bunches of withered leaves on healthy bushes, would reveal *clusters* of "*lackey* caterpillars," covered with their large web, working the mischief. They consume the pulp of the leaves that support them—then draw other leaves toward them, and devour those, or perforate them till they appear like lace. They will macerate the whole tree if left to themselves, but are so soon noticeable, the branch may be broken off and burned at an early period of their work; and two or three branches will very likely contain every one in the vicinity. In winter, these eggs may be destroyed even more easily, for they arrange like bracelets of hard beads around the naked twigs, and may be slipped off in unbroken bands. This caterpillar is striped like the shoulder tags of an English livery (or footman); hence it is called lackey caterpillar.

Lady Bugs.—Whatever else you destroy in the insect line, never injure a lady bug; for in its larvæ, its pupa (two stages of its metamorphoses), and its insect states, it feeds upon the *aphis* (the plant-louse or "vine-fretter"), that is so pestilent in gardens and green-houses, and even in window-gardening among parlor plants. Every child knows the lady-bird as well as the zoologist, who calls it "coleopterous," that is, sheath-winged—having its wings under cover of a pair of shells running longitudinally. The wings are of various brilliant colors, generally between orange and deep red. It belongs to the same genus of insects as the beautiful cochineal.

What's in a Name?—The *Country Gentleman* is responsible for the following:

"The *reputation* of a fruit has much to do with its sale, independently of its merits. As an example, a fruit dealer sent several barrels of this same pear (the Virgalieu or White Doyenne) to New York; a part marked as Virgalieus (by which market name they were widely known), and a part marked White Doyenne (by which they were not known). The former sold for nine dollars per barrel, the latter for only six, although gathered and assorted alike from the same tree."

CULTIVATION OF THE DAHLIA.

THE Dahlia was first introduced into England about the year 1786, and again in the year 1803, by Lady HOLLAND. It is called after Prof. DAHL, an eminent Swedish botanist. Its native habitat is on the sandy plains of Mexico, where it was found by HUMBOLDT at a height of three thousand feet above the level of the sea; but on its first introduction it was a very different article to what it now is. Of late years it has been vastly improved, and such a splendid variety and combination of color, and, for so large a flower, such fine form, can scarcely be found in any other plant.

The proper season for planting the Dahlia is about the beginning of June, but this season plants from cuttings grown in pots, and which are the best plants for blooming, may be put out now with success. If dry roots are planted about the second week in May, they should be put into moist sand till the eyes are started, which ought to be about the end of this month, and then carefully divided; one strong eye with a tuber attached being all that is needed to produce a good plant. They should then be carefully planted about four feet apart, covering the tubers about three or four inches.

The best soil for them is a good sandy loam, and plenty of old, well rotted stable manure. When the plants have started, if the weather is dry they should be well watered, and should be kept growing as long as possible. The plants should be supported by a neat stake and kept securely tied, and care should be taken to have the stake on what will be the prevailing windward side, which will in most cases be the west, for I find that the plant is less liable to injury by being blown from the stake than where it is blown against it.

During the growing season, care should be taken not to let any suckers grow, and the first three or four sides shoots should also be taken off.

The first lot of flowers will make their appearance about the beginning of August, but they never amount to much, as the season generally is dry and the grasshoppers eat them badly. About September they make new growth and commence flowering in earnest; and then comes the time when the grower feels amply repaid for all his trouble, for the magnificent display which the Dahlia makes when well grown, justly entitles it to the name of Queen of Autumn, which it has received; and it truly is the Queen, for no other flower of its season can vie with it in majesty and beauty of appearance, brightness of color, and perfection of form.

The following varieties will amply repay any one the little trouble attending their cultivation, viz: Duchess of Kent, Aurora, Bob, Shylock, Baron de Morelle, Beauty of Hastings, Clara, Unanimity, Mr. Selden, Queen of Primroses, Sir F. Bathurst, and Barmaid.

As soon as the tops are killed by the first frost, the stem should be cut off about six inches from the ground, and the roots allowed to stand for a few days to ripen off. When this has been done, choose a dry day, when there is not much moisture in the atmosphere, and dig the roots very carefully. Dig them up, and do not pull them in the least, for if you do you will pull out the necks of the tubers, thereby causing them to dry up and fall off. When dug, carry them to a cool, dry place, placing the stems downward to allow the sap to run out, and when perfectly dry, carefully pick out all the dirt adhering to them; then, before they get time shrivel, place the roots in a dry cellar, where no frost penetrates, put them on a shelf, or in a box raised from the ground, first laying down some nice, clean, dry straw, then a layer of roots, stems downwards, then another layer of straw, and another of roots, and so on till all are disposed of.

They should carefully looked over every six weeks, and all decaying plants cautiously removed. Dahlias if kept in this way and properly treated during the growing season, will be a pleasure and a credit to any one concerned in their cultivation; but do not try them if there is any chance of their being neglected, for nothing is affected more by bad treatment than the Dahlia; a really first rate variety, if starved or neglected, will not be worth looking at. W. T. GOLDSMITH—*Rochester, June 18th*, 1856.

WORMY APPLES.—ELIHU CROSS writes as follows to the *Country Gentleman:*

"Having been troubled with wormy apples for the last fifteen years, I thought I would try an experiment on one tree this season, to see if I could not stop the marauders in their wild career. I took half-a-dozen quart porter bottles, and filled each half full of sweetened water. I then suspended them from the branches of the tree in the following manner: I tied leather straps three-fourths of an inch wide around the branches, to prevent them from being girdled; to these leather straps I tied hemp strings, to which I attached the bottles, leaving them open to allow the millers to enter. I let the bottles remain in this situation five or six weeks, and on taking them down and emptying them, I found the millers had entered in great numbers, and were drowned in the liquid. In one bottle I counted fifteen—in another forty. I had twelve bushels of sound, wormless apples, while the fruit on other trees not experimented upon was wormy."

THE APPLE-TREE BORER.—In reply to an inquiry the *Country Gentleman* says:

"If the borer is taken *in time*, there is no difficulty in destroying it by punching it to death in its hole with a flexible twig. The peculiar crushing tells at once the death of the destroyer. It is, of course necessary to do the work *thoroughly*, as often as two or three times a year, at least. A sharp wire, with a barb, would probably clear out any hole of anything left by the insect. We have seen trees rescued by this process, in which the borer had made great progress, and had perforated it in all directions; but it requires close attention and vigilance. Young trees, in which much injury has not yet been committed, may be easily kept clear, if often and thoroughly examined, not forgetting that the holes by which the trees are entered may be buried, by transplanting, below the surface."

BLACK WALNUT AS A SHADE TREE—The editor of the *Prairie Farmer*, in some notes of a trip through Illinois, says:

"At Island Grove we saw some fine black walnut trees which were planted some twenty years ago, and are now in a thriving condition, and afford ample shade for stock, and are also an ornament to the farm. It seems to us that a row of walnut trees planted along the sides of our railroads, would make it much more comfortable for travelers, and at the same time, in a few years, would furnish timber for building purposes, sufficient to defray all expense of culture and care."

MARKETING FRUIT.

THE *Country Gentleman* has an excellent article on this subject, from which we make a few extracts, regretting that our space will not permit us to copy the whole:

"A good deal of excellent fruit has perished, all of which might have supplied the wants of the needy, in consequence of the headlong, unsystematic way in which it has been sent to market. Take, for example, the peach crop. A farmer has, perhaps, five hundred fine trees in bearing. He has never formed any plan for the sale of the crop, trusting that some dealer will come and ask for it, or intending to carry the fruit to market himself. The purchaser may or may not make his appearance. If he does not, no further arrangements are made till peaches generally are ripe. A general rush is then made from all quarters with them to the nearest town; the market is glutted; and they are sold for what they will bring. The report then spreads, as a matter of course, that there is no market for peaches; some are brought in; and many perish. In a few days, they are again scarce and high-priced; and if any peaches remain, perhaps another rush is made. In this way, the consumers are subjected to fluctuations in prices, and only procure them by snatches, not attempting to secure anything like a regular supply. Thus, perhaps thousands of bushels are rotting under the trees, while purchasers are deprived of them. The right way is to keep the entire community, who do not raise them, constantly and regularly supplied at moderate prices; this would be better for all parties. To accomplish it, every fruit-raiser should estimate, weeks beforehand, the amount of his crop, and the various periods of its ripening. He should then make a contract with a city dealer for the whole, to be supplied at regular and stated intervals, or employ an agent for their regular and continued sale, with the understanding that they shall be set at such moderate rates, that families can afford to go daily and obtain their regular supplies without fear of being shaved. If those who plant peach orchards would make a careful selection and distribution of sorts, so as to furnish a regular and uniform supply during the two or three months from the earliest to the latest, and would sell them at such prices as the community generally could afford to buy for daily use, probably ten times as many would be sold, at a greater average profit, and with a decided benefit to the health and purse of purchasers.

"Last year's crop of winter apples was nearly double the amount of average seasons; and prices ran low. Those who made early contracts with dealers found little difficulty; but barrels could not be obtained for all; and many remained undisposed of. Many owners resolved to keep their apples till spring, with the hopes of higher prices. When spring came, and decay was commencing, a general rush was made with them to the cities; the market was quickly overcharged; and, in New York city, good winter apples, but slightly injured by decay, were offered at about the usual price of empty barrels. The same management that we have proposed for the peach crop would prevent such a loss. Fruit-raisers must learn that there is an essential difference between selling wheat, which requires no management at all, except to get it to market, and selling perishable fruit, which requires a thorough knowledge of the business of picking, packing, transporting, and placing before purchasers. Those who are best informed on this branch of their business, are now in the practice of obtaining twice as much for their crops as those who sell to any purchaser who happens to come along, and who take but little pains in doing the work of cultivating, picking, and selecting in the best manner. They have acquired a reputation for the uniform excellence and condition of their crop; and fruit sellers are not afraid to purchase of them."

TWO FINE GARDENS IN SALEM, MASS.

THE editor of the Gazette has recently visited "Old Salem," Mass., and gives a description of the gardens of J. S. CABOT and S. FISKE ALLEN. He was much pleased with a bed of tulips in the garden of the former, and says:

"It contains upwards of *one thousand* varieties, of every shade and hue, and it was in its most perfect bloom at the time we saw it, sparkling in the sun like a floral mosaic, and in its blended hues presenting an appearance not surpassed by scenes of fairy land, and richer than the imagination could conceive. It was a sight not soon to be forgotten; and we think the exhibition could not, without difficulty, be excelled. The plants were perfect and healthy; and the ultimate of tulip cultivation seemed to have been attained."

Of Mr. ALLEN'S *Victoria Regia* he says:

"We visited his celebrated Victoria Regia, but one plant of which he has now living, all but this having been killed by the severe cold of last winter. This plant has been too often spoken of to need description at this time; but an examination of the spot where it grows, and the knowledge gained there of its requirements, and the delicacy of its culture, must convince one of the care and patience to be exercised in its development, that before was not appreciated. For several years an application has been devoted to it, that, in some families, would have been sufficient for the rearing of a large family of children; and the recompense has been in the satisfaction enjoyed in maturing the splendid plant, than which, to a man like Mr. Allen—an enthusiast in his favorite science—scarce more was wanted. We learned from him that this year he should discontinue its cultivation, a dampness proceeding from it that rendered it inimical to health, he himself having suffered therefrom. One bud of the mammoth lily is nearly ready to bloom. It puts forth but one at a time, and they follow each other in regular succession.

"In the same apartment with the Victoria Regia, are various other plants of tropical growth—plants of water and those of air—of very rare descriptions. Among these are the *lotus* of the Nile, African lilies, and air plants, whose old proclivity for impalpable diet is a matter of great wonder. A visit to Mr. Allen's grapery, in Flint street, was a great feature of our visit. This is nearly all in doors, for the rearing of choice descriptions, though several hybrid varieties—crossings between the Isabella and some foreigh grape—bore the winter exceedingly well out doors, and show great vigor. Several glass houses compose his grapery, heated by steam pipes, and arranged on the most scientific plans for securing an even temperature. Nectarines, peaches and figs were seen in great profusion, ripening beneath the glass; and more than one hundred varieties of grapes are struggling for eminence some day, in our horticultural reports."

ARTIFICIAL MANURES FOR FRUIT TREES.—The best manures for fruit trees, under usual circumstances, are composts made of stable manure, turf, muck or loam, with a small quantity of ashes, and still less lime. The addition of guano, bone manure, &c., increases its value. The proportions may be one-third manure, over one-third turf, loam or peat, and a tenth ashes, a twentieth guano or bone manure. The special manures, applied separately, *sometimes* produce decided results, but not usually.—*Country Gentleman.*

GENESEE VALLEY HORTICULTURAL EXHIBITION.

The Annual Exhibition of the Genesee Valley Horticultural Society, took place in this city June 25th and 26th. In everything except cherries, the exhibition was the best ever made by the Society. The display of roses was truly magnificent—Ellwanger & Barry exhibiting no fewer than 327 varieties, and A. Frost & Co., 319 varieties. A collection of peonies, containing 51 varieties, was shown by Ellwanger & Barry, which attracted much attention and general admiration. Many varieties were exceedingly beautiful; and we cannot but hope that they will soon take the place of the inferior kinds now commonly cultivated. This plant is perfectly hardy, and should have a place in every farmer's garden. J. Salter, gardener to John F. Bush, Esq, exhibited a fine collection of green house plants. His seedling geraniums, eight in number, were very superior. The wax plant *(Hoya carnosa)* attracted much attention. He also exhibited 41 varieties of gooseberries, imported from England. Many of them, such as the Guido, Tim Bobbin, Roaring Lion, London, Long Waist, Plumper, &c., bid fair to be an acquisition. Mr. S. informs us that he is never troubled with mildew.

Geo. Newland, of Palmyra, exhibited 31 varieties of strawberries, among them the Chilian, a very superior variety, and nine of his own seedlings, some of which promise well. He also exhibited stalks of rhubarb, from a seedling obtained from the seed of Cahoun's giant pie-plant. C. F. Crosman, of Rochester, also exhibited some very large and fine rhubarb, only one year from seed. The stalks were two and a half feet long, and, we judge, between four and five inches in circumference. He also showed some Frankfort Head lettuce, which were remarkably fine.

John Hampton, gardener to Selah Matthews, Esq., exhibited some very fine strawberries, and a collection of green-house plants.

Wm. Goldsmith showed 5 varieties of geraniums, 10 of Sweet Williams, 22 of roses, 17 antirrhinums, 7 petunias, 16 verbenas, 6 pansies, &c., which made a fine display. He also exhibited some very large Long Waist gooseberries, and some good heads of early Paris cauliflower.

H. E. Hooker & Co. exhibited 15 varieties of strawberries, among them Hooker's Seedling, one of the very best varieties we have. Of this strawberry, the committee remark:

"Hooker's Seedling—Regarded by all the committee as the most valuable new variety; and the committee were divided as to whether this or Burr's New Pine is finest in flavor. Hooker's the largest and very productive."

Hooker's Seedling took the premium for the best quart of strawberries. Ellwanger & Barry exhibited 35 varieties of strawberries, and took the first premium for the best collection.

A. Loomis, of Byron, made a fine display of roses (139 varieties), peonies, &c. One of our daily papers well remarks:

"Mr. Loomis deserves much credit for the pains he has taken in propagating fine varieties of the rose. His collection was quite superior. The Society are indebted to him for aiding in making the exhibition worthy of the Genesee Valley.

"Some professional nurserymen and florists nearer the city, might imitate the enterprise of Mr. L. in this respect, with advantage to themselves and the Society, which it ought to be their pride to support."

Mrs. C. A. Sheldon, a teacher in Public School No. 14, exhibited an Herbarium of native plants, six hundred varieties, exquisitely prepared, with botanical and popular names, &c. This was regarded by all amateur and professional florists, as one of the best things in the exhibition.

Mr. J. B. Fuller, of this city, and Mr. P. Parker of Victor, also exhibited fine collections of wild flowers. This department of our floral exhibitions is beginning to receive that attention it so eminently deserves.

TWO BEAUTIFUL SPRING FLOWERING SHRUBS.

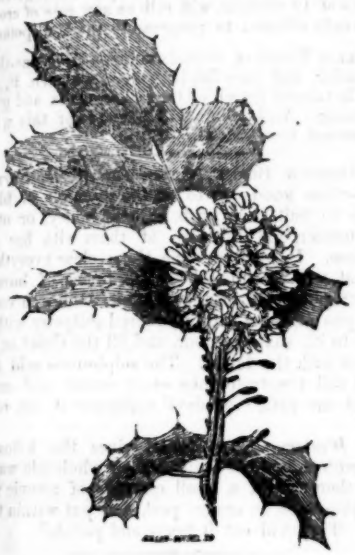
Double Flowering Crimson Currant—*(Ribes sanguinea flore pleno.)* There are few finer early flowering shrubs than the crimson currant. It originated in France, and was first introduced into the nurseries in 1845. It is now widely disseminated.

Double Flowering Crimson Currant.

The foliage and habit of the plant differ but little from other currants, but the flowers are produced on long branches, like the old single crimson—having the same brilliant color, with the addition of being quite double. It flourishes, like all its family, in a common garden soil, and is readily propagated by layers or cuttings.

Holly-Leaved Berberry—*(Mahonia Aquifolium.)* This is a fine, hardy, evergreen shrub. Its habit is spreading, and it attains the height of three or four feet. The foliage is dark green, glossy and prickly like the Holly. The flowers are produced in large heads or clusters, and are a beautiful clear yellow color. They begin to open early in April, and continue through all May. A single plant, or a mass of them on a lawn produces a fine effect. The co-

contrasts well with the brilliant scarlet of the Japan Quince, *(Pyrus Japonica,)* in bloom at the same time. In this country it succeeds well in any soil and



Holly-Leaved Berberry.

situation, but if possible it should be in a somewhat shaded place, where the sun will not reach it in winter with much force It is so low, however, that it keeps pretty well in the shade. It is easily propagated from seeds and by division of the plant, as it throws up radical shoots freely.

Rose Bugs, &c.—Especial watch should now be kept of choice *rose* trees, to detect the rose bugs, saw flies, gnats, leaf miners, leaf rollers, and green flies, that during and just after their blossomming period infest them. The rose bugs come up from the ground and are stupid and sleepy, and can be shaken upon cloths and killed. The leaf miner is orange colored, and conceals itself *within* the leaf, and may be traced by pale brown zig zag-zag lines in the leaf, with narrow black lines in the *center*, occasioned by the drying of the *epidermis* where the caterpillar has eaten out the pulp. This moth is the "red-headed pigmy," and must be destroyed by tobacco-water, or quassia, or lime. The "saw-fly" burrows into the flower *bud* and the grub eats itsway out, and must be removed by hand-picking. The *gnat* occasions oak-gall-like excrescences on the branches by puncturing them; and the leaf rollers cut out pieces of leaves that, fastened in a spiral direction, enfolds them in a cave.

The rose moth fastens the bud to one of the leaves, previously folded, by slender threads. They must be smoked, picked and washed off, as best they may. The Aphis (green fly) especially disfigures the *white rose*, but appears in myriads on all rose trees before it is feared, and must be brushed gently off, or more securely banished by dipping the branches in infusions of quassia, lime or tobacco. Quassia is best, as the others require to be washed off before they have time to dry, as they hurt the vitality of the plant, and, like snuff, leave unsightly particles on the leaves. A safe preparation of tobacco is half a pound to a gallon of hot water, which solution, of course, must be allowed to cool. Far better, however, than any of these solutions, is one of whale oil soap, in the proportion of two pounds to fifteen gallons of water, a discovery for which Mr. David Haggerston last year received one hundred dollars reward from the Mass. Horticultural Society.

LETTUCE AND CUCUMBERS.

Lettuce that are becoming old, may be made white and tender by gathering up the leaves and tying them together with a string at the top. In this way, the plant will grow in the center, and will become something like an early York cabbage in shape. As soon as the leaves have been tied up, the ground should be thoroughly hoed; and if the ground be dry, water the plants freely. You can scarcely give lettuce too much water, provided you hoe them frequently.

I have always experienced much difficulty in the cultivation of cucumbers, from the ravages of the yellow bug, and a large, black insect. Many plans have been recommended of getting rid of these pests; and among others, pepper grass sown among the hills is said to be a prevention; but I have always found an ounce of cure to be worth a pound of prevention, which I administer early every morning while the plants are young, by killing all the bugs to be seen on them. The black bug is generally found eating the stem of the plant just above the ground, and is very destructive.

Cucumber vines, when bearing, require a great deal of water, which should be supplied at the roots, and also over the vines. When your vines begin to droop in the hot weather of July and August, it is almost a sure sign that they need water. I know of no plant that rewards the labor of good care and frequent watering more than the cucumber, both in the luxuriant appearance of the vines, and the large quantity of fruit produced. H. E.

The Curculio.—During one of the discussions at the Fourth Session of the North-western Fruit Growers' Association, Mr. Barry gave the following mode of checking the depredations of this insect. "He succeeded in growing a fine crop of plums by adopting a very simple remedy; in fact, the trees were breaking down with their load of fruit. They had exhibited this year forty varieties at the Horticultural Show.

"The plan of paving the ground under the trees, which has generally proved so successful, gave them the idea of beating the earth hard under the trees, to answer, in part, the same purpose. This was done at the first appearance of the curculio. A boy was sent among the trees daily, to jar the trees, and sweep up the insects and punctured plums, and destroy them. By this, the insects and larvæ are destroyed, not only protecting the present crop, but making serious inroads in the next year's crop of insects. The habit of the insect is to fly from the ground upward, as it seldom takes any other direction than a perpendicular one; so if you reduce the number, you may in this manner secure a good crop, though your neighbor neglect to destroy them under his trees.

"He had more hope in this simple remedy than in any other, and had no doubt, when faithfully applied, it would in all cases prove satisfactory."

Ladies' Department.

HINTS FOR HOUSEWIVES.

To Cure Damp Walls.—Boil two quarts of tar with two ounces of kitchen grease, for a quarter of an hour, in an iron pot. Add some of this tar to a mixture of slaked lime and powdered glass, which have passed through a flour sieve, and been completely dried over the fire in an iron pot, in the proportion of two parts of lime and one of glass, till the mixture becomes of the consistence of thin plaster. The cement must be used immediately after being mixed, and therefore it is proper not to mix more of it than will coat one square foot of wall, since it quickly becomes too hard for use; and care must be taken to prevent any moisture from mixing with the cement. For a wall merely damp, a coating one-eighth of an inch thick is sufficient; but if the wall is wet, there must be a second coat. Plaster made of lime, hair, and plaster of Paris, may afterwards be laid on as a cement. The cement above described will unite the parts of Portland stone or marble, so as to make them as durable as they were prior to the fracture.

Melted Butter.—Put a table-spoonful of flour into a clean saucepan; mix it carefully with a little water at a time till you have about a cupful; now cut into it, in small pieces, four ounces of butter; shake it around rapidly till well mixed; then place it on the fire; watch it constantly, and keep shaking it and turning it around until it boils; it is then ready. Be careful to turn it one way, or the butter will oil; should this happen, you may recover it in some measure by putting into it a little cold water, and pouring it backwards and forwards several times.

Gall Soap.—Take one pint of beef's gall, and cut up about two pounds of hard soap; put it over the fire; let it simmer until it is all dissolved; then pour it into a deep basin, and when cold cut in pieces. This soap is excellent to prevent any kind of colored goods from fading. Black calico will not become rusty if washed with it.—*Housekeeper.*

Macassor Oil.—Common oil, three quarts; spirit of wine, half a pint; cinnamon powder, three ounces; bergamot, two ounces. Heat them together in a large pipkin. Then remove it from the fire, and add four small pieces of alkanet root, keeping it closely covered for several hours. Let it then be filtered through a funnel lined with filtering paper.

To Preserve Pie Plant.—Perhaps there are some of your readers fond of this plant, who do not know that it makes an excellent preserve. For this purpose it should be put into pieces about half an inch long, and boiled with *plenty* of sugar, in the ordinary way of making preserves.

To Make Corn Bread.—Two quarts corn meal, one quart rye, one quart of sweet milk, one quart of buttermilk, one teacup of molasses, one spoonful of salt, and one teaspoonful of soda. Beat with a spoon until well mixed. The crust, if not burned, will make an excellent coffee.

A New Wax of Making Barley Water.—Put two table-spoonfuls of pearl barley into a quart jug; two great spoonfuls of white sugar; a small pinch of salt; a small bit of orange or lemon peel, and a glass of calves' foot jelly; and then fill the jug with boiling water.

For the Cure of Croup.—A piece of fresh lard, as large as a butternut, rubbed with sugar, in the same way that butter and sugar are prepared for the dressing of puddings, divided into three parts, and given at intervals of 10 minutes, will relieve any case of croup, not already allowed to progress to the fatal point.

A Great Favorite with Invalids.—Take one-third brisk cider, and two-thirds water; sweeten it, and crumb in toasted bread, or toasted crackers, and grate on nutmeg. Acid jellies will answer for this when cider cannot be obtained.

To Destroy Black Ants.—The *Maine Farmer* says:—"One good way to rid the premises of black ants, is to bait them with a little honey, or other sweet matter, and then go at them with fire and brimstone. It may be done thus: clear everything out that will be injured by the fumes of burning sulphur; put some of the sulphur in an iron vessel, and, if you please, a little powdered saltpetre with it; set fire to it; shut the door, and fill the closet or the premises with the fumes. The sulphurous acid thus formed will penetrate into every corner and cranny, and kill the little 'varmints' whenever it can reach them."

The *Western Agriculturist* gives the following more genteel, but not quite such a wholesale way of killing them: "Mix a small quantity of arsenic with sugar placed on an orange peel, and put within their reach. They will eat it freely and perish."

Shirt Ironing.—Dry your shirts, then make your starch quite thick, and add a little salt. Boil about twenty minutes; starch when hot. *Rub them well*; this is very important; then dry again. See that they are quite dry before damping; do not make them too wet, neither too dry. Fold very tightly; let them lie three or four hours before ironing. Iron the back first, by folding in the middle, and drawing it out from the front; then iron the sleeves, wrist bands and body; then the shoulder piece and the collar. If the shirt is gathered behind, draw the bosom down to the bottom of the shirt, so as to free it from wrinkles; have your plaits all smooth. Do not have your iron too hot, and be careful to keep it on till quite dry, or the linen will present a blistered appearance. Do not wipe your iron with a wet cloth; this will make it stick as soon as anything. We believe rubbing the starch well in, is the secret of good shirt ironing.

To Preserve Butter a Long Time.—The late Dr. Anderson recommended for preserving butter a composition of salt, 2 parts; saltpetre, 1 part; sugar, 1 part; 1 oz. of this mixture to one pound of butter. It seems that butter thus treated will keep sweet for a lengthened period; but that for the first fortnight it does not taste well.

Worth Knowing.—In silk embroidery, if particles of cotton wool are worked under the twist or floss (stuffing) of grapes, buds, roses, and large leaves, it raises the work, and gives it a much richer appearance than that equally well executed without it.

Early Rising.—I would inscribe on the curtains of your bed and the walls of your chamber—"If you do not set apart your hours of reading, if you suffer yourself, or any one else, to break in upon them, your days will slip through your hands unprofitable and frivolous, and unenjoyed by yourself."—*Lord Chatham.*

Editor's Table.

STATE AND COUNTY SHOWS FOR 1856.

New-Jersey,	Newark,	Sept. 9—12.
Vermont,	Burlington,	Sept. 9 to 12.
Canada East,	Three Rivers,	Sept. 16—18.
Virginia,	Wheeling Island,	Sept. 17—19.
Ohio,	Cleveland,	Sept. 23, 24, 25, 26.
Canada West,	Kingston,	Sept. 23—26.
Am. Pom. Society,	Rochester,	Sept. 24—30.
Michigan,	Detroit,	Sept. 30—Oct.1,2,3
New York,	Watertown,	Sept. 30—Oct.1,2,3
Illinois,	Alton,	Sept. 30—Oct.1,2,3
Pennsylvania,	Pittsburgh,	Sept. 30 to Oct. 2.
Kentucky,	Paris,	Sept. 30 to Oct. 5.
National Ag. Show,	Philadelphia,	Oct, 7.
California,	San Jose,	Oct. 7, 8, 9.
Wisconsin,	Milwaukee,	Oct. 8 to 10.
New Hampshire	———	Oct. 8, 9, 10.
Iowa,	Muscatine,	Oct. 8—10.
North Carolina,	Raleigh,	Oct. 14—17.
Georgia,	Atalanta,	Oct. 20—25.
Indiana,	Indianapolis,	Oct. 20—25.
Maine,	———	Oct. 28—30.
Alabama,	Montgomery,	Nov. 11—14.

New York County Agricultural Fairs.

Albany, Albany,	Sept. 23, 24, 25.
Essex, Elizabethtown,	Sept. 18, 19.
Franklin, Malone,	Sept. 24, 25, 26.
Jefferson, Watertown,	Sept. 17, 18.
Monroe, Rochester,	Sept. 24, 25, 26.
Oneida, Rome,	Sept. 23, 24, 25.
Ontario, Geneva,	Sept. 24, 25, 26.
Oswego, ———	Oct. 17, 18.
Rockland, New City,	Oct. 8, 9.
Schuyler, Watkins,	Sept. 8, 9.
Wayne, Lyons,	Sept. 23, 24, 25.

United States Agricultural Society.—The Fourth Annual Exhibition of the United States Agricultural Society, will be held at Powelton, (Philadelphia,) on Tuesday, Wednesday, Thursday, Friday and Saturday, October 7th, 8th, 9th, 10th and 11th.

The First Exhibition of this Society, held at Springfield, Mass., in October, 1853, was devoted exclusively to an examination of Horses:—at Springfield, Ohio, 1854, Cattle alone, were exhibited; at Boston, 1855, all departments of Farm Stock,—Cattle, Horses, Sheep and Swine, were shown.

The Society, encouraged by past success, and by the approbation of the Agricultural community, now propose to offer Premiums, not only for Domestic Animals, but also for Poultry, and the products of the Fruit Garden, the Grain Field and the Vineyard, and for Agricultural Implements and Machinery.

Premiums from Twenty-five to Two Hundred Dollars, amounting in the aggregate to over Twelve Thousand Dollars will be offered for the various classes of Domestic Animals, Fruits, American Wines, Vegetables, Grains, and Agricultural Implements and Machinery.

A local Committee of forty citizens of Philadelphia, representing the various branches of industry, has already been appointed to co-operate with the officers of the Society, in perfecting arrangements for the Exhibition; and Fifteen Thousand Dollars have been guaranteed to meet expenses. This material aid, coupled with the excellence of the selected location, and the large amount of Premiums offered, induces the expectation that the Exhibiton of 1856, will be superior to any of its predecessors.

Favorable arrangements for the transportation of Stock and other articles, will be made with the various Railroads.

The List of Entries, the Awards of Premiums, and the Proceedings, will be published in the Journal of the Society, for 1856.

The Premium List, with the Regulations and Programme of the Exhibition, will be furnished on application to Mr. John McGowan, Assistant Secretary of the United States Agricultural Society, 160 Chestnut Street, (Rooms of the Philadelphia Agricultural Society,) or by addressing the Secretary, at Boston,

MARSHALL P. WILDER, *President.*
William S. King, *Secretary.*
July 1st, 1856.

To the Breeders of Devon Cattle.—The subscriber is now collecting materials for the Third Volume of the Devon Herd-Book, and takes this method of inviting breeders to send the pedigrees of all animals eligible for entry in the Work. It is is desirable that all entries be received before the first of July, or as soon thereafter as practicable, in order that definite information may be given in regard to the time of publication.

All animals must be able to trace, on both sides, from unquestionable North Devon Stock; and to furnish the necessary evidence on this point, persons sending pedigrees should give the *name and residence of the breeder of every animal referred to*, unless such animal is registered in the First or Second Volume of the Devon Herd-Book, in which case reference to the No. will be necessary.

Terms:—Each patron is expected to take at least one copy of the Work, the price of which will be one dollar, and also to pay twenty-five cents for the registry of each animal—registry fee to be paid in advance.

Cuts of breeding animals, properly executed, will be inserted in connection with their pedigrees, at a charge of $7 each. They will be printed on fly leaves, in the best manner.

It will be recollected that there has already been published an American edition of the First and Second Volumes of the Devon Herd-Book, bound together, with a frontispiece of the Quarterly Testimonial, and two handsome Illustrations of English prize Devons. The price for these two volumes is two dollars. They will be forwarded as may be directed, on the reception of the above sum.

SANFORD HOWARD,
American Editor of the Devon Herd-Book.
Office of the Boston Cultivator,
Boston, Mass., June 1st, 1856.

Italian Buckwheat.—*Eds. Farmer:*—I saw in your June number an advertisement of "*Italian Buckwheat.*" I sent by mail to the advertiser for a small sample of it, *and received millet.* O. Collins.—*Wilkesbarre, June 19,* 1856.

We thank our correspondent for the above; for although we cannot hold ourselves responsible for everything that appears in our advertising columns, we will not knowingly permit them to be used to deceive the public.

Cure for Heaves in Mules.—You may say to our friend J. D. K., Ohio, that in a conversation a few days since with an Englishman, he told me that he had cured mules which had the heaves very bad, by giving them *Savin*, about what would lie on a quarter dollar, in powder. In England he gave it green in the bou hs, and in six weeks' time, the mules showed no more heaves than if they had never had it. D.—*Gates.*

THE PARIS AGRICULTURAL EXHIBITION.—Our late European exchanges contain some account of the great Agricultural Exhibition at Paris, but the list of prizes which was made known June 6th, has not yet reached us. The entries in most of the Departments were very large. The catalogue alone is a huge volume of 479 pages!—There were 1,300 head of cattle exhibited; of these 195 were Short Horns—140 bred in England, and 55 in France. The Herefords and Devons were niggardly represented. The Ayrshires, Black-poled cattle, Black Angus, West Highland, and the Irish Kerry were not in full force, numbering about 200 head. Of the various Swiss tribes of horned cattle, there were no less than 228 animals; of the Dutch breed, 40 animals; of the Tyrolese and Austrian, 62 animals; of the long-horned Hungarian, Moravian, Gallican, Bavarian and Bohemian races, 46 animals; of Saxony, 12 animals; of Holstein and Denmark, 32 animals, and 4 buffaloes from Hungary. The French exhibited nearly 500 head—among them, 61 of the great Norman breed, 37 Flemish, and 36 of the beautiful white Charolais breed, so similar to our Short Horns. There was a considerable number of grade Short Horns—a cross of the Short Horn bulls with the native breeds—which, in the language of the *Mark Lane Express*, formed "one of the most interesting features in the whole exhibition."

There were about 200 pens of sheep exhibited, containing 1,200 sheep; 500 of which were contributed by France, 400 by Great Britain, and the rest by Holland, Austria, Saxony, etc.

There were 171 pigs exhibited; 82 from France, 72 from Great Britain, and 17 from other countries. Of the 82 belonging to France, there were 62 representing the English breeds—a high compliment to British breeders.

In the Poultry class there were 474 coops, containing 1,400 birds.

In the Implement class there were 2,107 lots, comprising every kind of instrument or appliance connected with agriculture. Of these, 371 belonged to Great Britain, 3 to Australia, 88 to Belgium, 51 to Denmark, 5 to Holstein, 2 to the Roman States, 7 to the United States, 42 to the Grand Duchy of Luxembourg, 33 to Holland, 1 to Prussia, 5 to Saxony, 36 to Switzerland, 4 to Wurtemberg, and 1,430 to France.

In the Agricultural Produce department, there were 4,635 lots; 120 of which belonged to England, 480 to various other nations, and 4,065 to France, chiefly contributed by the Government Schools of Agriculture.

Next month we will endeavor to give a more detailed account of this grand exhibition.

PREMIUMS.—We had intended to announce the names of the successful competitors for our premiums this month, but owing to press of business, we shall have to defer it till the August number. In the mean time, we shall send a *Rural Annual and Horticultural Directory*, postage paid, to all those who have got up a club of eight subscribers. We presume it was the intention of the late publisher to send only to those who asked for the book, but we have received one or two letters which indicate that the offer was not so understood, and we shall therefore send the work to all who are entitled to it.

NATURAL BAROMETERS.—Chickweed is an excellent barometer. When the flower expands fully, we are not to expect rain for several hours; should it continue in that state, no rain will disturb the summer's day. When it half conceals its miniature flower, the day is generally showery; but if it entirely shuts up, or veils the white flower with its green mantle, let the traveller put on his great coat.

L. G. MORRIS' SALE.—This great sale of Short Horn and Devon Cattle, Southdown sheep, Essex and Berkshire pigs, &c., took place June 24th and 25th. The attendance was very large. The first animal led into the ring was the Short Horn bull Romeo, a cut of which we gave in the May number. He was knocked down to REHN & CUTS, of Lancaster, Ohio, for $600—a remarkably low price for such an animal. Suffolk Hero, a two year old, was next sold to GEORGE CLARK, Otsego county, N. Y., for $325. Charlemagne, a yearling, for $245, to JOSEPH HILTON, New Scotland, Albany county, N. Y. Marmion, for $300 to P. & C. S. HAIMES, Elizabethtown, N. J. Jacintha Romeo, for $400, to JOHN HUNTER, of Pelham, Westchester county, N. Y. Chester, for $300, to DAVID BROOKS, Avon, Livingston county, N. Y. Orpheus, for $675, to J. P. Crippen, Coldwater, Mich.

The calves sold well: Belmont, for $375, to AMOS J. WOOD, of Jefferson county, N. Y. Stanley, for $230, to B. M. WHITLOCK, West Farms, Westchester county, N. Y. Barrington, for $150, to JOSEPH ORVIS, Massena, St. Lawrence county, N, Y. King of Algeirs, for $400, to ROBERT GORDON, Paris, C. W. Bailiff, for $110, to JOSEPH ORVIS, Massena, St. Lawrence county, N. Y. This closed the sale of the Short Horn bulls, ten in in number—the sales amounting to $4,310.

The Devon bulls were next sold: Frank Quarley, for $350, to B. P. JOHNSON, of Albany, N. Y. [This is nothing for such a bull.] The next were yearlings: Waugganda sold for $105, to G. D. PARRISH, Burlington, N. J. Master Butterfly, for $340, to R. PETERS, Atlanta, Ga. Somerville, for $155, to L. H. COLBY, Groton, Tompkins county, N. Y. Byron, for $250, to FRANCIS MORRIS, Throggs' Neck.

At the time of our going to press, an account of further sales had not reached us.

CLOVER HAY.—The *Boston Cultivator* recommends the following mode of curing clover: "Cut the clover, if practicable, when free from wet. Leave the swaths unspread for three or four hours. Then, with forks, put the mown clover into cocks which will make each about fifty pounds of dry hay—taking care to lay it up in flakes, and rounding off the tops so as to give the best protection against rain. The process of curing will advance according to the state of the weather. By examination from day to day, a good judge can tell when it is cured, or how much more time it will require. When it is so near dry that it may be finished in one day, if the weather is fair, turn the cocks bottom upward, after the dew is off, and lighten the damp part as much as seems necessary, being careful not to dry it so much that it will powder in handling."

VENTILATING HAY STACKS.—The British farmers have a method of ventilating their hay, oat and barley stacks which we may frequently adopt with advantage; and in stacking cornstalks it would be always beneficial. They fill a large bag, say 3½ feet high and 20 inches in diameter, with straw, and place it vertically in the centre of the stack, putting the barley, oats or hay, whichever it may happen to be, round it. As the stack rises they lift the sack; and so on to the top. In this way there is a chimney formed in the center of the rick or bay, into which the steam or gases generated find their way and escape readily.

NEW WHEAT FROM ILLINOIS.—The St. Louis *Republican* of the 20th instant, says that on Thursday a quantity of new white wheat was received from Troy, Madison Co., Illinois—the first of the incoming crop that has made its appearance in the market this season.

Notices of New Books, Periodicals, &c.

THE RISE AND PROGRESS OF THE ENGLISH CONSTITUTION. By E. S. CREASY, M. A., London. Published by D. Appleton & Co., New York: 1856. Sold by D. M. DEWEY, Rochester, N. Y.

This is a book, as the title denotes, containing an account of the great and important events which have resulted in the formation of the present English government. It contains a copy of the great Charter which the barons extorted from King John in 1215; also of the Petition of Rights granted by Charles I; and also of the Bill of Rights, granted by King William III in 1683, on his accession to the English throne—the three great bulwarks of English liberty. These acts are of great interest not only to Englishmen, but to Americans; for upon them are founded most of the fundamental principles of our own government. It contains, also, a general history of the English people throughout the several stages of the growth of their government. It is a very interesting and valuable work.

A JOURNEY IN THE SEABOARD SLAVE STATES, with Remarks on their Economy. By FREDERICK LAW OLMSTED, Author of "Walks and Talks of an American Farmer in England." New York: Dix & Edwards. London: Sampson Low, Son & Co. 1856.

Those who have read the "Walks and Talks of an American Farmer in England," will not fail to get this book. For practical common sense, keen observation, and graphic descriptive powers, Mr. OLMSTED has no superior. This work, of some 700 pages, is as interesting as a novel, while it abounds with practical information on the social and industrial habits of the slave-holding States from Virginia to Texas. We cordially recommend the work to all our readers.

TRANSACTIONS OF THE NORTH-WESTERN FRUIT GROWERS' ASSOCIATION, at their Fourth Session, held in the city of Burlington, Iowa, September 25, 26, 27, 28, 1855. Edited by M. L. DUNLAP. Chicago: 1856.

This is a neat pamphlet of some 150 pages. It contains the address of P. BARRY, Esq., delivered before the Society during its session at Burlington; extended reports of the discussions; reports of the various committees, &c., &c.; presenting a mass of information of great interest to all engaged in fruit culture. We hope to enrich our columns by liberal extracts. Mr. BARRY and Mr. DUNLAP will please accept our thanks for copies.

HISTORY OF ROCK COUNTY, and Transactions of the Rock County Agricultural Society and Mechanics' Institute. Edited and compiled by ORRIN GUERNSEY. Janesville, Wis.: Wm. M. Doty & Brother, Printers. 1856.

We are indebted to Mr. GUERNSEY, Corresponding Secretary of the Rock Co. (Wis.) Agricultural Society, for a copy of this work. The book is a credit to the enterprising Society, and to its intelligent Secretary.

LIFE SKETCHES FROM COMMON PATHS; a Series of American Tales. By Mrs. JULIA L. DUMONT. New York: D. Appleton & Co. 1856.

These "sketches" are well taken and cannot fail to interest. For sale by D. M. DEWEY.

Inquiries and Answers.

ANOTHER CURE FOR HEAVES.—A correspondent in Ohio asks for a remedy for the heaves. I can give you one that is said to be almost a specific; I do not however, vouch for it. Take of saltpetre 4 ounces; sulph. antimony 2 oz.; tartarized antimony 1 drachm; mix and divide into six doses. Give one powder for three nights in succession; then omit for a week, and repeat with the other three. If this does not effect a cure, he must try some other means. Yet I have known two cases (bad ones) that were said to have been cured with this remedy and nothing else. ARLING—*Rush.*

GUANO ON GRAVELLY SOIL.—In answer to a question in a late number of the *Genesee Farmer*, I will say, that in my opinion, guano does best on gravelly soil, having witnessed the effect of it on clay loam and gravelly soil, the past season. S. K. GIVEN—*Sheepscot Bridge, Me.*

GRAFTING LILAC ON AN ASH STOCK.—It has been said the lilac may be grafted on an ash stock. Can any of your readers tell us from experience, the process and the season, and whether it should be the white or the black variety of ash? D.—*Gates.*

ENGLISH HORSE BEANS.—Can you or any of your correspondents tell me through your paper what kind or kinds of beans the English farmers feed their horses, and whether they have ever been tried in this country, and with what success? D.—*Gates.*

Will some of our correspondents answer the above?

BOOKS FOR A YOUNG FARMER.—I am a young farmer, and wish to get a few good reliable books on agriculture. What can you recommend to me? A. R.—*Ohio.*

The following works may be read with advantage in the order named: Nash's Progressive Farmer, Norton's Elements of Scientific Agriculture, Dana's Muck Manual, Stockhardt's Chemical Field Lectures, Johnston's Agricultural Chemistry and Geology, Thaer's Principles of Agriculture, and Boussingault's Rural Economy. As books of reference we may name Allen's American Farm Book, and Morton's Cyclopedia of Agriculture. The former as being to some extent American, the latter as containing the more recent practices of British Agriculture. The list might be advantageously extended. One or two good, reliable agricultural papers will of course pay you weekly or monthly visits; and if you had a set of back volumes of the *Genesee Farmer*, or of the *Cultivator*, or of the *New England Farmer*, you would find them exceedingly useful. Indeed, we consider them indispensable to a good agricultural library.

HARVESTING BARLEY.—Can you give me a few hints in regard to the best time to cut and harvest barley? W. S.—*Oneida Co.*

Barley is quite ripe enough to cut when the reddish color on the ear has disappeared. When fully ripe the ear bends down to the straw, and is very apt to fall off in mowing turning, &c., occasioning much loss; while if cut too early it shrinks considerably, and is not so good for malting purposes. English writers, while fully admitting that in allowing barley to get quite ripe there is much loss, advocate the practice on the ground that it is next to impossible in any other way to get that *evenness* so necessary for malting purposes.

With a heavy crop of straw, we prefer always to bind up the barley into sheaves. The first expense is more, but there is less loss, and far less labor in carting, stacking and threshing. With light crops, if the barley was rolled—as it always should be—and the ground is smooth, it is doubtless the most economical mode to mow it, and stack it loose. It will need turning in the swath, and with a light crop this may be done with a hand-rake, and the loose barley between the swaths raked together at the same time. Barley needs considerable time in the field before the grain and straw is sufficiently dry and hard to stack. Barley straw, when not too ripe, we consider quite nutritious, but it must not be carried too soon, or, besides the injury to the grain, it will heat in the stack and be spoiled. MORTON'S Cyclopedia of Agriculture, recently published, says: "Barley requires from ten days to a fortnight of good weather to bring it into proper condition for being stacked, and in damp, hazy weather, considerably longer." Fortunately, such a rule, although applicable to Great Britain, does not hold good here; but you would do well to give barley sufficient time before stacking.

ADVERTISEMENTS,

To secure insertion in the FARMER, must be received as early as the 10th of the previous month, and be of such a character as to be of interest to farmers. TERMS—Two Dollars for every hundred words, each insertion, PAID IN ADVANCE.

COLUMBIAN GUANO.

IMPORTED BY THE PHILADELPHIA GUANO COMPANY.

A. LONGETT, Agent,

34 CLIFF STREET, CORNER OF FULTON, NEW YORK.

I CALL the attention of Farmers and others interested, to the reports given below, showing the great advantage this Fertilizer possesse over all others. Its richness in Phosphates has never been surpassed by any other fertilizer known. Its application to the soil is easy, as will be seen by the directions given for its use. We are continually receiving the most satisfactory accounts from all that have given the Columbian Guano a trial, and have every reason to think that our farmers will find it equal, if not superior to Peruvian, as it is far more durable, and cheaper, and can be had at a price that will pay the farmer for its use; and we can but ask for our interests, and that of the farmer, a fair trial.

117 BROADWAY, BALTIMORE, May 20, 1856.

To Wm. F. Murdoch, Esq., Agent of Philad. Guano Co.

Dear Sir: The sample of Guano left with me by you for analysis, has been carefully examined, with a view to determine the manner in which the phosphoric acid is combined with the lime. In order to accomplish this, I had designed to make a a separate estimation of the white hard crust, and the brown body of the rock, in the manner in which Drs. Higgins and Bickell made their analysis. I found, however, that the crust alluded to was so thin, and adhered so closely to the body of the rock, in the specimens contained in the sample, that it was impossible to separate it perfectly, I, therefore, have contented myself with examining the body of the rock, which constitutes by far the largest portion of the sample.

From this I obtained results which are embodied in the following table:

Phosphoric Acid,*	46.22
Lime,	38.75
Phosphate of Iron,	0.35
Phosphate of Magnesia,	0.61
Sand,	0.63
Sulphuric Acid,	1.96
Chlorine,	Trace.
Organic Matter, Salts of Ammonia, and combined water,	8.95
Water, (hygroscopic,)	2.34
	99.81

* In this is not included the small amount existing in the phosphates of magnesia and iron, both of which were estimated separately.

From this table it will be seen, that the opinion first propounded by me, as to the combination of phosphoric acid and lime in this guano, is borne out by the present analysis; that it exists, viz, in the form of a salt, composed of two equivalents of lime, one of water, and one of phosphoric acid.

The following table correctly expresses the composition of the body of the rock known as Columbian Guano, and making up the great bulk of the commercial article sold under that name:

Phosphate of Lime,		87.95
Containing	Phosphoric Acid,	46.22
	Lime,	35.95
	Water,	5.78
Sulphate of Lime,		4.76
Sand,		0.63
Phosphates of Iron and Magnesia,		0.96
Hygroscopic Water,		2.34
Organic Matter, containing Ammonia,		3.17
		99.81

You have requested me to state the advantages which might be expected to be derived from this fertilizer in view of its chemical constitution. The first and most evident, is the uncommonly large proportion of Phosphoric Acid which it contains. It is by far the richest known source of this valuable substance. The amount of phosphoric acid which is contained in the 87.95 parts of neutral phosphate of lime, belonging to the sample analyzed, would if combined with lime, in the proportion to form bone phosphate, make 100.14 parts of that compound. Hence it follows, as a matter of necessity, that in the decomposition of this manure in the soil, about 12 per cent. more phosphoric acid will be given to the plant, than could possibly be extracted from the same quantity of bone earth, by the same solvents.

Another important consideration, is the greater solubility of this phosphate in ammoniated water. As all rain water, and most soils, contain ammonia, and as the organic part of this guano, when decomposed, generates a small quantity of the same alkali, the manure, while in the soil, will be acted upon by water, holding ammonia in solution. Now, this induces in the neutral phosphate, a change which does not take place in bone earth. On the latter it has no action whatever, but it converts the former into bone phosphate, by combining with a portion of phosphoric acid, to form phosphate of ammonia. Columbian Guano may therefore be regarded as playing a very important part in the fixation of the volatile alkali.

The permanency of this manure is a matter so well understood by every practical farmer, that it requires no comment.

Very respectfully yours, &c., A. SNOWDEN PIGGOT.

Office of Inspector of Guano, 11 Exchange Building.

Analysis of an average sample of Columbian Guano, imported by Wm. F. Murdoch, Esq., Agent of the "Philadelphia Guano Company," March 17th, 1856, in the "Mary Elizabeth."

Phosphoric Acid,	40.25
Lime, &c.,	59.75

40.25 per cent. of Phosphoric Acid is equal to 87.21 per cent. of Bone Phosphate of Lime. WM. SMITH REESE.

CHARACTERISTICS OF COLUMBIAN GUANO.

1. It is by far the richest source of Phosphoric Acid for the farmer yet known, containing one-third more than ground bones.

2. It contains less than one-fourth of the water always present in the Peruvian, and 20 to 30 per cent. less than any other guano—consequently it can be packed in bags, at a diminution of one-fourth the freight and packages, besides the convenience of handling, and subsequent value of bags.

3. It is sold as fine powder, and does not require sieving, as do the Peruvian and other Guanos, in order to their uniform application.

4. It does not injure the nails of the laborer in sowing, on account of the absence of lumps, and for the same reason it can be applied in one half the time, with a drill, with perfect uniformity. Whereas, guano containing lumps cannot be distributed uniformly, even with the aid of a drill.

DAVID STEWART, M. D.
Chemist of Md. State Agricultural Society.

DIRECTIONS FOR USE.

For Wheat and Small Grain—An application of 200 to 250 lbs. Columbian per acre, immediately after plowing, and lightly harrowed in, will produce not only abundant crops of grain, but will leave the ground with a luxuriant set of clover—thus benefiting the land for after crops. If desirable, it can be applied at the time of sowing the grain, and all harrowed in together.

For Corn—200 lbs. per acre. It can be applied either in the drill or broadcast; if the latter case, the ground should be lighly harrowed after the application.

For Potatoes, Turnips, Ruta bagas, &c.—200 to 250 lbs per acre in the drill or hill, after the seed is sown, will produce an abundant yield of either article.

For Grass Crops—The Columbian can also be advantageously used as a top-dressing for grass, clover, &c., at the rate of 200 lbs. per acre, applied immediately after the frost is out of the ground. It is also a valuable manure for garden vegetables, flowers, grape vines, fruit trees, &c.

Price, $36 to $40 per ton. For sale by
July 1. A. LONGETT, Agent for New York.

FAIRBANKS' HAY SCALES.

MORE than four thousand of these convenient and durable Scales have been put up by us in different parts of the United States and the British Provinces.

Several Gold and Silver Medals have been awarded to us by the various Agricultural Societies throughout the country, for

THE BEST HAY AND CATTLE SCALES.

And we have certificates without number from officers of city and village corporations, manufacturing establishments, and private individuals, who have our scales in use, testifying to their superior excellence.

To be in season for the coming hay crop, orders must be given early.

Scales set in any part of the United States or the Canadas by experienced workmen. Address by mail or otherwise,

FAIRBANKS & CO.,
July 1. No. 186 Broadway, New York.

ANGLO-ITALIAN VILLA.

FOR sale, in Havana, Schuyler Co., N. Y., beautifully situated on an eminence that overlooks the village, about four acres of land, house about 50 feet square, two stories high, with basement; good out-buildings, choice shrubbery, more than 400 fruit, dwarf, and ornamental trees, grape vines, exotic grapery, &c. Havana is 11 hours from New York.

For full description and terms apply to J. F. PHELPS,
Havana, July 1, 1856—1t* Horticulturist.

FOR SALE AT COST PRICES,

TO CLOSE A CONSIGNMENT CONSISTING OF

MOWERS AND REAPERS, (Forbush's latest Improved,) Straw Cutters, Corn Shellers, Fanning Mills, Plows, Garden Rollers, Wheel Barrows, &c. A. LONGETT,
June 1—2t. 34 Cliff street, corner of Fulton, New York.

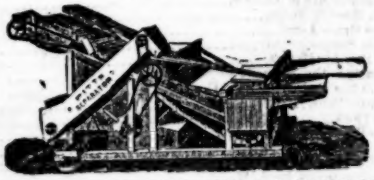
LAWTON BLACKBERRY.

DESCRIPTIVE CIRCULARS, with terms of sale, and and ample directions for cultivation will be forwarded to applicants.

Address WILLIAM LAWTON,
July 1—4t. No. 54 Wall street, New York.

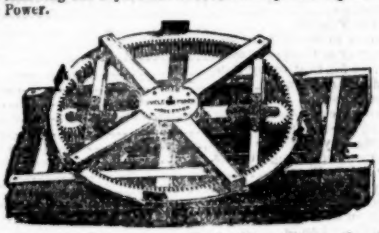
ATTENTION THRESHERS!

PITTS' PREMIUM SEPARATORS AND DOUBLE PINION HORSE POWERS.



THE above cut is a representation of the justly celebrated Pitts' Machine for Threshing and cleaning grain at one operation. It is the best Machine for threshing and cleaning grain in existence.

The following cut represents Pitts' Double pinion eight or ten Horse Power.



As a superior and every way reliable Horse Power, the above stands unrivalled.

Pitts' Machine was awarded a splendid Gold Medal at the recent Paris exhibition in France.

We call attention to the fact that we are now manufacturing the above Machines at Rochester, N. Y., in a more substantial, durable and of a larger capacity than any hitherto built by us in this city, having all the latest improvements made by John A. Pitts.

We also make a new style of Straw Carriers, more portable than any heretofore made. We can furnish the latest and best all iron Power for eight or ten horses.

We invite all who intend purchasing to examine our machines; they will more than equal the best expectations of the public.

ALEXANDER GORDON & CO.,
Successors to JOHN A. PITTS,
June 1—2t. 68 South St. Paul street, Rochester, N. Y.

UNION AGRICULTL WAREHOUSE AND SEED STORE

No. 23 FULTON ST., (NEAR FULTON MARKET,) NEW YORK.

THE Undersigned, having succeeded to the business for the manufacture and sale of Agricultural Implements and Machinery, heretofore conducted by Messrs. RALPH & CO., at No. 23 Fulton street, intends to continue the same in all its branches, and is prepared to furnish goods of the best style and quality at low prices. Machinery, or any articles in the line, manufactured to order according to pattern at short notice.

My facilities for manufacturing enable me to offer to Dealers and Farmers the following leading articles at low figures:

Hand and Power Corn Shellers.
Fan Mills.
Plows, Harrows, Cultivators.
Revolving Hay Rakes.
Spring tooth Hay Rakes, (the best Rake in use.)
Cast iron Corn Mills, for Hand or Power.
Road Scrapers, Wheel-Barrows.
Field and Garden Rollers.
Corn and Cotton Planters.
Post or Ground Augers.
Hay, Straw and Stalk Cutters.
Wagons and Carts.
Vegetable or Root Cutters.
Sausage Cutters and Stuffers.

In connection with my farming operations, I have for some years past given much attention raising thorough bred Short Horn, North Devon and Ayrshire cattle, and other fine stock, and now offer the advantage of my knowledge and experience to persons desiring to purchase stock. ALFRED M. TREADWELL,
April 3t. 23 Fulton St., New York.

PRICES OF FERTILIZERS FOR SUMMER, 1856.

PERUVIAN GUANO, No. 1, with Government brand and weight on each bag,.....per ton of 2,000 lbs. $53.00

Columbian Guano,.....	"	"	$36.00 to 40.00
Superphosphate of Lime,....	"	"	45 00
Bone Dust, Ground,.....per bbl.			2.50
" Turnings,.....	"	2.37 to	2.50
" Sawings or Meal,.....	"		3.00
" Mixed fine ground,.....	"	2.75 to	3.00
Plaster of Paris,.....	"	1.00 to	1.25

The second quality of Peruvian Guano will have figure 2 under the weight mark.

A. LONGETT,
July 1. 34 Cliff street, New York.

BOOKS FOR THE FARMERS!

FURNISHED BY THE PROPRIETOR OF GENESEE FARMER.

The Cow, Dairy Husbandry, and Cattle Breeding. Price 25 cts.
Every Lady her own Flower Gardener. Price 25 cents.
The American Kitchen Gardener. Price 25 cents.
The American Rose Culturer. Price 25 cents.
Prize Essay on Manures. By S. L. Dana. Price 25 cents.
Skinner's Elements of Agriculture. Price 25 cents.
The Pests of the Farm, with directions for extirpation. Price 25 cents.
Horses—their Varieties, Breeding, Management, &c. Price 25 cents.
The Hive and Honey Bee—their Diseases and Remedies. Price 25 cents.
The Hog—its Diseases and Management. Price 25 cents.
The American Bird Fancier—Breeding, Raising, &c. 25 cts.
Domestic Fowls and Ornamental Poultry. Price 25 cents.
Chemistry made Easy for the Use of Farmers. Price 25 cts.
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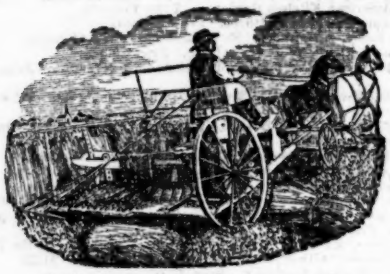

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